

Eighth Annual Edition

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United States- German Economic Survey 1982

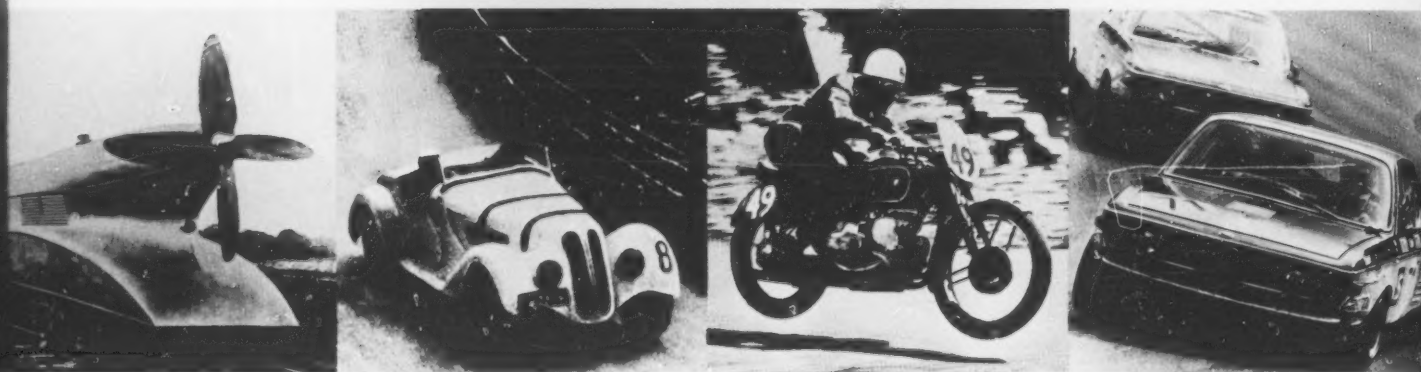
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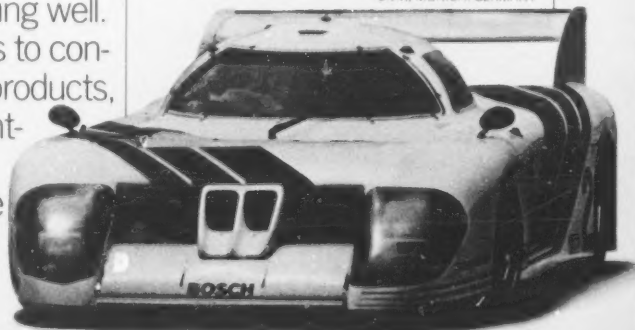
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**United States-
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1982**

Issued January 1983

**Deutsch-Amerikanisches
Wirtschaftsjahrbuch**

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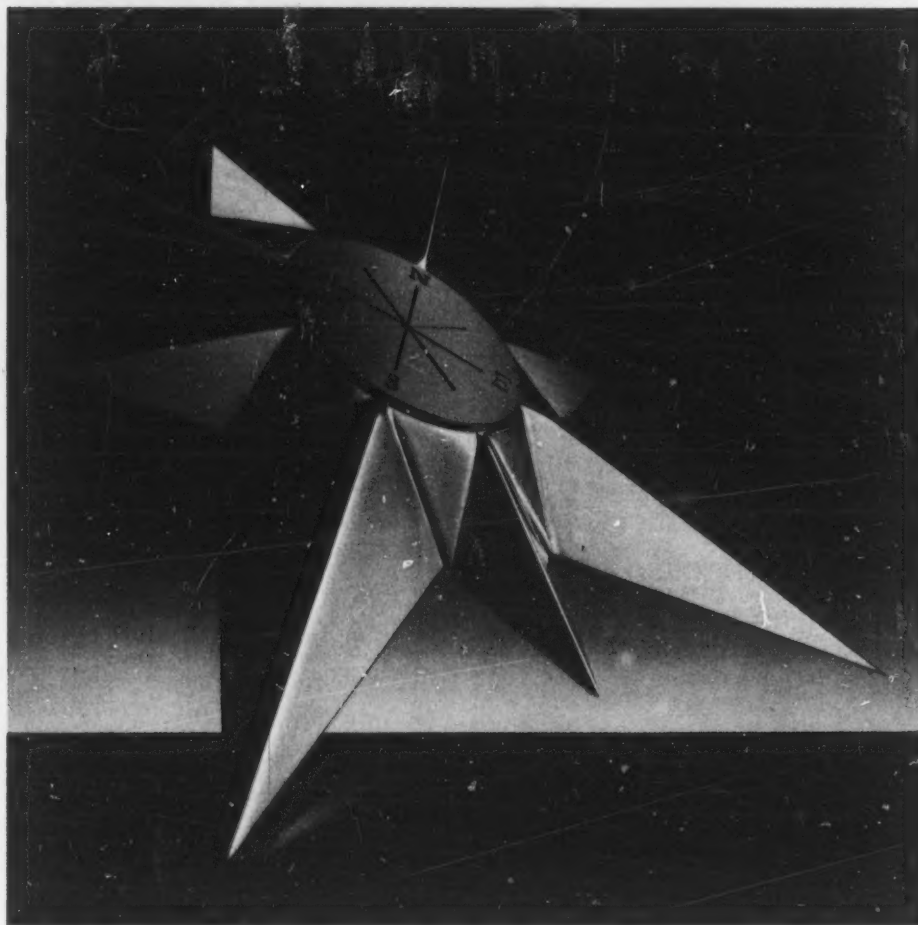
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liquid-smooth and seemingly frictionless. The shift lever is mounted down on the transmission tunnel—but look again. The quadrant reads P-R-N-D-S-L. It is no mere automatic but a four-speed automatic, and is designed to serve equally well when shifted by hand. America's most advanced automotive braking system is four-wheel disc braking. An 11-inch disc brake is fitted to every wheel of every 300 D Turbodiesel Sedan.

Mercedes-Benz engineers care little if the outside world knows that total swept brake area is a massive 456.5 square inches, or that the 300 D's front suspension geometry is devised to help minimize front-end "nose diving" in hard stops. Their main concern is that the driver is better served by these and myriad other technical flourishes.

Designed, not decorated

Even when fully padded and finished, the interior of the 300 D's welded steel body shell measures almost five feet in width—sufficient to easily accommodate three adults in the rear seating area, for example. Electronic cruise control, AM/FM stereo radio/cassette player, automatic climate control system and electric window lifts—whatever conventional luxury sedans furnish by way of real conveniences, so does this sedan.

Garishness, however, is absent.

The instrument panel is no entertainment center twinkling with gadgetry but an exercise in ergonomics, meant to ease the driver's task by simplifying it.

The engineers continuously strive to make driver controls fewer and less awkward to use, and so reduce driving complexity. Item: the single steering-column lever that lets you perform nine different driv-

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TABLE OF CONTENTS

9 PREFACE

11 THE VIEW FROM FRANKFURT

Von Frankfurt aus gesehen
Dr. Karl Otto Poehl
President, Deutsche Bundesbank

21 THE VIEW FROM WASHINGTON

Von Washington aus gesehen
Paul Volcker
Chairman, Board of Directors, Federal Reserve Bank

STEEL INDUSTRY

34 THE GERMAN STEEL INDUSTRY: AN OVERVIEW

Ueberblick ueber die Situation der deutschen Stahlindustrie
Dr. Ruprecht Vondran
Wirtschaftsvereinigung Eisen- und Stahlindustrie

39 THE AMERICAN STEEL INDUSTRY FACES THE COMPETITION

Die Amerikanische Stahlindustrie und die Konkurrenz in Weltmarkt
David M. Roderick
Chairman, United States Steel Corporation

47 WORLD STEEL DYNAMICS

Die Stahlindustrie in der Welt: Ein Vergleich
Peter F. Marcus
First Vice President
Paine Webber Mitchell Hutchins, Inc.

MANUFACTURING SECTORS

56 THE AMERICAN AUTO INDUSTRY'S ECONOMIC ENVIRONMENT

Die wirtschaftliche Umwelt der amerikanischen Autoindustrie
L. A. Iacocca
Chairman, Chrysler Corporation

65 GERMAN AUTO INDUSTRY: PROGNOSIS TO 2000

Prognose fuer den deutschen PKW-Bestand bis zum Jahr 2000
Deutsche Shell Aktiengesellschaft

79 THE DAWN OF A NEW AGE IN MANUFACTURING

Der Anbruch eines neuen Zeitalters fuer die industrielle Produktion
Frank T. Curtin
Group Vice President, Machine Tools, Cincinnati Milacron

87 THE GERMAN MACHINE TOOL INDUSTRY

Ihre Heimart ist die Weltmarkt— Die deutsche Maschinenbauindustrie
A. Batschari
German Machine Tool Association

93 CHEMICALS AND ENERGY: CHALLENGES FOR THE EIGHTIES

Chemie und Energie: Herausforderungen fuer die achtziger Jahre
Dr. Matthias Seefelder
Chairman of the Board of Executive Directors
BASF AG

105 AMERICAN CHEMICAL INDUSTRY: DOOM OR BOOM

Zukunft der amerikanischen Chemie-Industrie
Patrick P. McCurdy
Director, Technical Communications
Dow Chemical Company

ECONOMICS AND FINANCE

114 TRENDS IN AMERICAN INVESTMENT IN GERMANY

Amerikanische Investitionen in Deutschland— Trends
Kurt F. Viermetz
Vice President and General Manager
Morgan Guaranty Trust Company of New York

121 WORLD TRADE AND THE SERVICE SECTOR

Der Welthandel mit Dienstleistungen
James D. Robinson III
Chairman and Chief Executive Officer
American Express Company

129 ACCOUNTING IN GERMANY AND THE UNITED STATES: A COMPARISON

Unterschiede in der Rechnungslegung zwischen der Bundesrepublik Deutschland und den USA
Jermyn P. Brooks
Partner, and
Dieter Eisner
Partner, Price Waterhouse

135 THE INTERNATIONAL ECONOMIC POLICY OF THE US AND EUROPE

Die internationale Wirtschaftspolitik der USA gegenueber Europa
Dr. C. Fred Bergsten
Director, Institute for International Economics

141 INDUSTRIAL DEMOCRACY: A THIRD WAY

Industrielle Demokratie: Ein dritter Weg
Philip Rosenthal
Chairman, Rosenthal AG

147 VENTURE CAPITAL IN THE US AND GERMANY: A COMPARISON

Venture-Kapital in den USA und in Deutschland: Ein Vergleich
Gregor Mettlinger
Associated European Capital Corporation

153 THREE ASPECTS OF U.S. TRADE POLICY

Drei Aspekte amerikanischer Handelspolitik
Malcolm Baldrige
United States Secretary of Commerce

PROFILES

168 GERMAN AND AMERICAN COMPANIES

Deutsche und Amerikanische Unternehmen
Cities, States, and Trade Fair Organizations/
Staedte, Laender, und Messgesellschaften

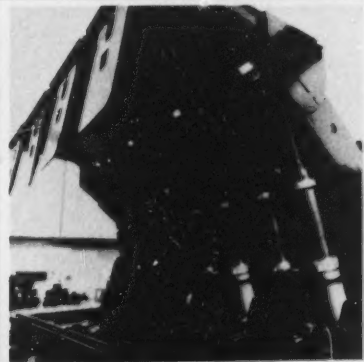
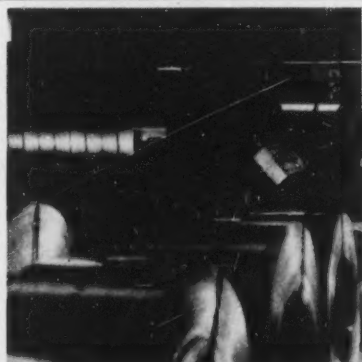
FACTS AND FIGURES

208 Statistics / Statistiken Information Sources / Informationsquellen

230 Acknowledgements, List of Advertisers / Quellenangaben / Anzeigenverzeichnis

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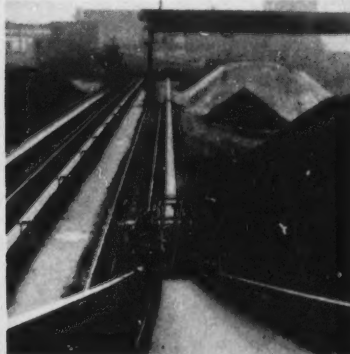
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PREFACE

The slowdown in world production and trade which we forecast in last year's edition of the United States-German Economic Survey is now hard upon us as we introduce our annual publication for the year 1982. While domestic monetary developments in both the United States and the Federal Republic continued to proceed favorably, other results for 1982 were not at all flattering. Developments on the labor market, in international finance, and in foreign trade prevented meaningful economic recovery.

Thus, although inflation continued to moderate during the course of the year, unemployment in our two nations reached record postwar highs, our banking sectors have been thrust into worrisome circumstances in international lending, major disinvestment in our basic industries has proceeded apace, while the climate of international trade has continued to deteriorate.

These developments in the world economy have however begun to yield one very important positive result: It is now clearer than ever that the sluggish performance of our economies in recent years has *structural* origins of a dimension far beyond what was assumed a decade ago, when suddenly-higher petroleum prices were blamed for all the economic ills which followed OPEC cartelization. The persistence and deepening of the current world recession have changed all that.

Thus, the fresh debate over our economic "reindustrialization" has become very lively and many-sided, articulating the concerns of social democrats and supply siders alike. We welcome this manifold response which the economic crisis has brought forth; it is a credit to both the ingenuity and to the essential freedom of our societies. The regaining of our economies' international competitiveness is quickly becoming our most important challenge for the 1980s.

It is our wish that the United States-German Economic Survey affords a useful

contribution to this emerging dialogue. To serve this goal we focus this year upon those important business sectors which have encountered industry-specific difficulties which must be overcome in the years ahead. Accordingly, contributors in both countries from the steel, automotive, chemical, and machine tool sectors have furnished an in-depth perspective on industries which together make up 66 percent of total US-German trade.

German exports to the United States spurred ahead by 14 percent during the first three quarters of this year, while American exports to the Federal Republic remained flat. Much of this trend is accounted for by exchange rate differentials. Indeed, it has become well understood that our countries' trade balances depend more than ever before on an international monetary and commercial environment where the rules are clearly understood and are adhered to. Hence, while critics have begun to seriously address the problems of maintaining our domestic production base, as we moved along toward the GATT ministerial meeting in November other issues were probed as well: the future of the growing service sector, the threat of protectionism, labor problems, and foreign investment. We highlight these matters in our concluding section.

We gratefully acknowledge the efforts of all those who have supported our contribution to what is now emerging as the first fundamental critique of commercial and industrial policy in the postwar world. The eighteen perspectives contained in this volume are a testimony to the kind of critical effort, interchange, and inventiveness which have made both our nations such dynamic economic partners on the global stage.

Werner Walbrol

Executive Director

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The View from Frankfurt

Fiscal and monetary policy today faces challenges worldwide. Economic growth has for all intents and purposes come to a standstill. Unemployment has reached record levels and is a burden on both the social climate and national budgets. Weak demand and high costs have damaged the profitability of many firms and thereby have inhibited the innovative forces which are necessary to produce long term economic growth.

These recessionary developments concern us not only because they have produced negative consequences in our domestic economies. The interdependence of national markets means that recessionary developments in the world economy affect our foreign trade as well. The effects are transmitted from one troubled trading nation to its trading partners. Thus the germs of recession threaten to spread across national boundaries. This has especially been the case recently, as growing foreign debt in numerous countries has posed problems for the financing of their national balance of payments.

In this situation it is absolutely necessary that the negative national and international developments are recognized by the responsible economic and monetary authorities and that a correction course is set for the future. We in the Federal Republic must recognize even more so, just how short-lived and tentative analyses and the projections they support can be. Even as late as this spring the expectation arose that we would

experience an economic upturn. This expectation has not been fulfilled. The most important indicators point to continued stagnation. Neither through demand for consumer goods nor in terms of investment demand have changes occurred in the current situation which promise a positive trend in our economic capacity. Foreign demand, which during previous recessions served as a generating impulse and which in the spring of 1982 provided the strongest support for the Federal Republic's economic situation, has instead exhibited a falling trend in recent months. As is well known, demand in OPEC countries for industrial products suffers from the downturn in oil consumption following from higher petroleum prices. Demand in developing countries and newly-industrialized countries has been hampered by situations in these countries' current accounts and liquidity balances.

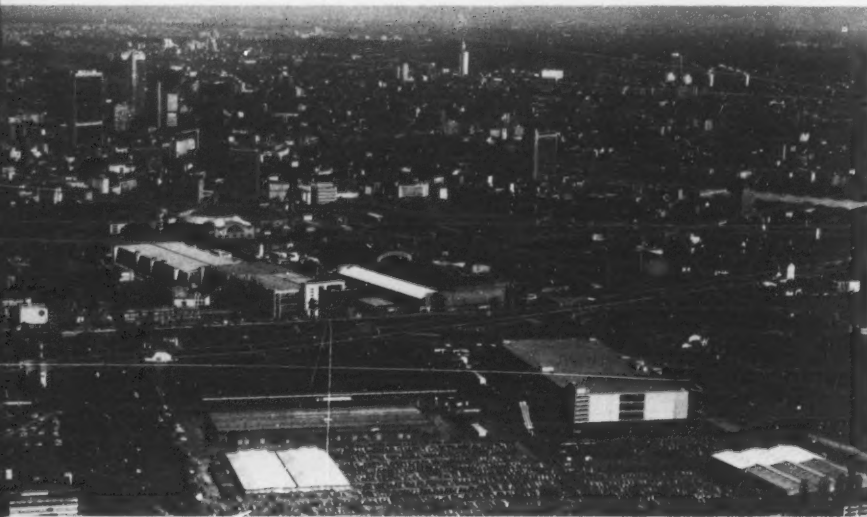
It is absolutely necessary that the negative national and international developments are recognized and that a correction course is set for the future.

Accordingly the prospects for the reduction of the extremely high unemployment—which at the present time is among our most urgent problems—do not look favorable at the moment. Moreover it must be anticipated that the number of unemployed by the



by Dr. Karl Otto Poehl
President,
Deutsche Bundesbank

winter of 1982-1983 will reach over two million. The rise in unemployment is not only a result of the fall off in job opportunities (which in turn is a function of economic conditions) but also is in part caused by the entry of ever more young people into the workforce, and by the increasing inclination of women of middle age to enter the job market. Moreover the number of foreign workers in the Federal Republic has not yet stabilized. Thus unemployment in Germany has a strong demographic and structural component as well as an economic basis. And to the structural grounds of unemployment must be added the pressure on firms to rationalize wherever possible. This has led in an age of automation and electronics to increased layoffs in our workforce.



Inflation is in any event not simply the price which must be paid for the creation of more employment. The overwhelming conviction of the government leaders of the members of the European Economic Community meeting in London in 1977, that inflationary policies will not reduce unemployment but rather merely expose its origin, holds true today. This conviction was the point of departure at the Versailles Conference in the Fall of 1982, five years later, as leaders stiffened their resolve that economic policy must concentrate on the fight against excessive monetary growth rates. In any event a short-lived economic boom stimulated by money creation would be in the long term interest of no one. People who have been removed from participation in economic activity through layoffs would not find a position, nor would new entrants in the job force—that is, the large number of youth—be able to count on finding a secure job.

However, in addition to these depressing auspices there are a few signs that the tone of the German economy at the present time sounds worse than the actual reality. In any event a few developments have revealed themselves as points of light in an otherwise grey economic picture. These give cause to the hope that the deepened pessimism in the economic climate in the course of 1982—insofar as the pessimist outlook as been expressed in the business climate by firms—may be moderated during the course of 1983.

One fundamental problem which has overshadowed the recent past can be said to be overcome: the extreme foreign trade imbalance of the years 1979-1981. This posed grave problems for monetary policy at that time. Two years after the record deficit of DM 30 billion in 1980, it can be assumed that in 1982 a rough balance in the current account will be achieved. Part of this improvement will derive from the rise in exports to the OPEC countries.

The upturn in the German trade balance was accompanied by a perceptible recovery in the external value of the Deutsche Mark, after which since 1979 our currency has lost considerable value on the foreign exchange markets. The signals for this development proved to be the monetary measures of the Bundesbank of February 1981, by means of which the interest rate differentials against the dollar steadied and confidence began to return. Our currency has through this means been buoyed to the point that the Bundesbank has been able to successively reduce interest rates. With respect to the most important trading partners, since February 1981 the Deutsche Mark has on average been revalued by about eight percent. This has allowed the result that on foreign exchange

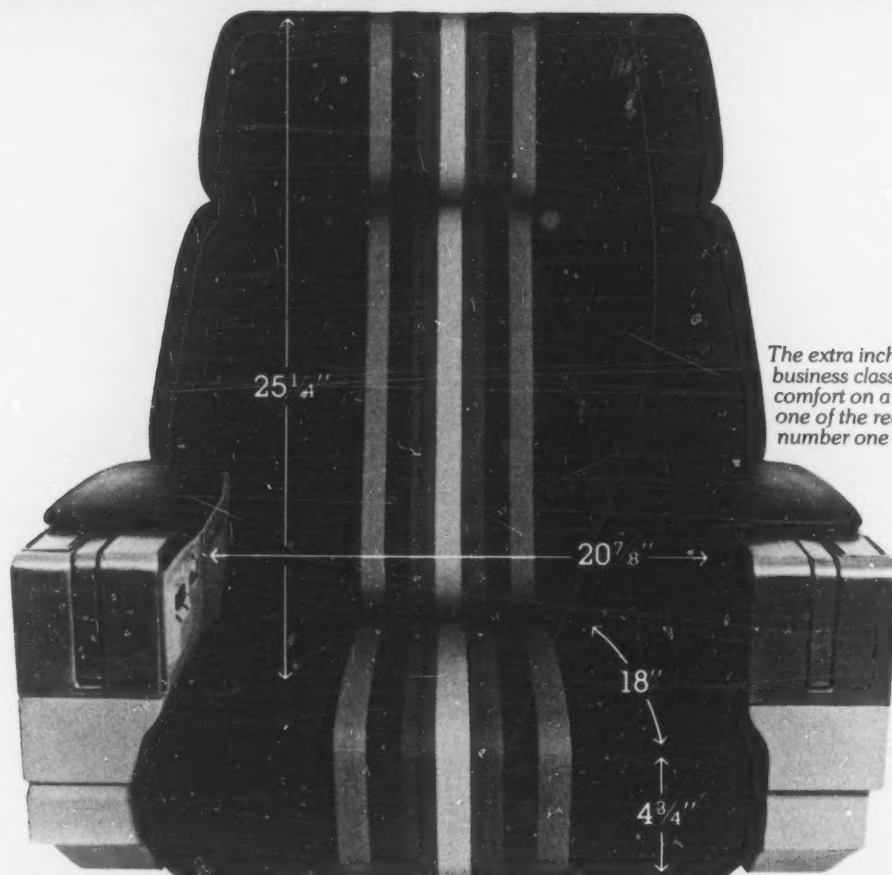
In these circumstances, the generation and maintenance of jobs must be given considerable weight in the formation of economic policy. In consideration of the already high unemployment situation, success in this area is to be expected only in the medium term.

One has to go back to the years of German reconstruction—that is, to the early 1950s—before one encounters similarly high unemployment figures. It would, however, be a mistake to put the present employment crisis and the crisis of the 1930s on the same level. The extremely high unemployment at that time was in part the result of accelerated deflationary processes, which today is not the case. Today the problem is rather the outcome of a high level of economic stagnation coupled with excessive inflation rates in most countries.

Indeed the persistent danger of inflation is the greatest obstacle to overcoming unemployment. The threat that inflation will accelerate again is by no means exorcised by the operation of monetary policy alone.

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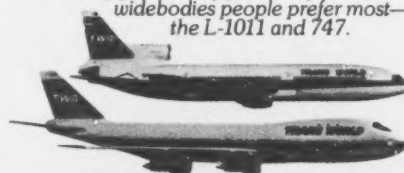
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markets the improved economic data for the Deutsche Mark in comparison to other currencies will be felt even more strongly.

And the developments of price levels in the Federal Republic give cause for careful optimism. Apart from temporary influences the price rise tendencies have been mitigated. In September 1982 the inflation index was once again in the four percent range. The improvement of our terms of trade—in light of lower oil and raw material prices and the strong showing of the Deutsche Mark on foreign exchange markets—was here a contributory factor. But we cannot be satisfied for the moment merely because the Federal Republic has been reconfirmed as one of the world's most important stable currency regimes. We must persist in our efforts to push down the rate of inflation. Long term growth rates and full employment are only possible in a climate of economic stability.

Energetic efforts in this direction are required not least from our social partners. The inflation rate should be an important indicator during the wage round process; the labor unions must take account of this, the more the purchasing power of salaries and wages is threatened. Fungible wage negotiations will result to the degree that they rest upon credible and sound economic, financial, and monetary policy. This has been demonstrated in the salary and wage agreements for 1982, which by an average rise of about 4.5 percent the efforts to combat unemployment in the medium term are not jeopardized.

The on the whole moderate development of wage increases for 1982 could also have contributed to the result that the profitability of German businesses has markedly improved during the course of the year; the profit downturns of previous years certainly had no precedent.

In the meanwhile the stronger flow of internal capital in German firms will be used to further financial consolidation. Despite federal measures designed to further investment (depreciation allowances, investment allowances) it could take longer than in previous business cycles before improved financial opportunities result in higher investment. Uncertainties about world economic development or about the course of economic and fiscal policy could negatively impact on the investment decisions of firms.

In order to achieve consolidation in the investment phase as soon as possible, the economy should remain spared of new burdens in the wage realm or in the form of costly workhour shortenings. The German labour unions have not been unaware of the present economic necessities; they are going to have to show responsibility and

The threat that inflation will accelerate again is by no means exorcised by the operation of monetary policy alone.

moderation.

In comparison to previous years there is now less room to maneuver in the field of economic policy. This holds especially true for fiscal policy, which in the Federal Republic as well as in many other countries only limited options obtain. The fact that public credit demands crowds out private investment and mortgages future generations to a gigantic public sector debt burden means that the first task must be that of consolidation of the budget. For 1982 a total public sector deficit of 70-75 billion—about 4.5 percent of GNP—is foreseen. This is in contrast to the debt figure of DM 80 billion the year before. In this way the trend of rising deficits, which began in 1978, can be broken, even if one considers that the distribution of the high returns of the Bundesbank was a contributing factor. Because of the unfavorable economic developments the recovery of public finances was smaller than had been anticipated. Above all, the rise in unemployment, which directly affected the federal budget, essentially amounted to a proportion higher than that forecast for 1982.

At the present time public spending including social security is growing to about half the national product. An increase of duties and tax rates above the presently existing high rates must therefore be avoided by the authorities, if negative effects and tax evasions—in the form of a shadow economy—are to be kept within limits.

Another persistent trend in public finance during the last several years also gives rise to concern. The investment quota of public authorities has fallen further. Here a turnaround is strenuously to be hoped for. Not a rise in public spending for investment, but a more effective use of present investment funds is required, in order to create more impetus for growth and employment.

Because of the narrow limits imposed upon the fiscal policy of our economy, the monetary policy of the Bundesbank is under serious pressure. As the rapid degeneration of interest rates in the German financial markets have demonstrated since 1981, the Bundesbank has taken up this challenge. Interest rate developments have since notably relieved some of the pressure on the financial side. The Bundesbank has used the breathing room opened by favorable American interest rate developments. More far-reaching relief will in the future depend upon a continuation of these trends in the United

Not a rise in public spending for investment, but a more effective use of present investment funds is required.



The Bundesbank has used the breathing room opened by favorable American interest rate developments.

States. The success of the Federal Reserve in its fight against inflation means that the chances for future positive developments do not appear unfavorable, even if the budget deficits in the US rise further. By all means a possible loosening of our monetary policy will develop only to the degree that the goals of stability are not jeopardized. The monetary aggregate targets of the Bundesbank for 1982 allow for a certain degree of freedom in the event of lower American rates.

The efforts of the Bundesbank to manage both domestic and foreign economic problems through the mechanism of its monetary policy has occasionally given rise to criticism. Thus it has been urged that monetary policy be brought more into line with overall economic goals and hence leave the after effects of such policy to be accounted for on the exchange markets. This advice has not been followed by the Bundesbank, because a flight of capital out of DM-denominated assets by international holders of our currency must be avoided. Moreover, the experience of a number of nations after the first oil price shock of 1973/74 has shown that such a policy leads to a vicious circle of devaluation and inflation, which especially on the wage side would demand supplementary injections and later more painful remedies. Devaluation and inflation would quickly jeopardize the expected growth and employment effects of monetary policy and force that policy to be reversed.

The Bundesbank has also not taken on another concept of "freeing" the economy from high interest rate effects. This idea has been expounded in the European Economic Community, namely, an independent European policy of low rates. Such a concept would scarcely have a chance, even if it were to be anchored by the often-favored capital controls. In this case the freedom of capital movement—which we see as an essential correlation of freedom in goods and services trade and thus not to be compromised—would be seriously restricted.

Also, it should not be understood that in the world economy there are inherent forces in protectionist policies which render these a

solution for overcoming acute problems. During critical periods it is even more tempting to solve urgent difficulties through unilateral measures. Attempts to do so must be steadfastly resisted, in order to avoid the mistakes of the 1930s and 1920s. The plain fact that our present problems are of a global nature means that international cooperation is all the more essential. To this end the IMF has recently announced:

The Fund's views on the economic objectives of adjustment policies, and on the use of instruments to achieve them, have been accompanied by a strongly held belief that a maximum degree of international cooperation is required to help member countries meet the difficult economic challenges that confront them in a world economic environment of great uncertainty... In essence, international cooperation means that each country should take account of the interests of other countries in the formulation and conduct of its own economic policies.

I can only applaud this point of view without reservations. To my mind there are no alternatives.

This holds true for the gravity of the problems which have recently become apparent in the international financial system. The international credit, money, and financial markets have a history of extraordinary growth—not the least because of the recycling of oil-price related surpluses in OPEC countries. The high efficiency and flexibility of these markets have made an important contribution to the financing of balance of payments deficits. And of course their considerable success had laid the basis for those present difficulties which have arisen from national debt accumulation.

In this regard monetary authorities should be united in their willingness to coordinate and extend those guiding and steering functions which they exercise on the national level. The risks of the international credit markets are all too evident. The tensions revealed by these markets make cooperative precautions absolutely necessary. But also on the national level supplementary steps must be taken where needed to overcome those risks which have already become very great in many nations. Among these tasks I count the urgent responsibility to consolidate national accounts. This directly concerns German bank operations abroad; without consolidation a thorough assessment of risk is not possible.

It is well known that the efficiency of the international financial markets provided too much freedom in the financing of balance of payments deficits while real adjustment was

neglected. This negative development should have been immediately corrected, if with moderation. The correction of external imbalances is a most painful process, but in the long run it is the only way out of the present crisis situation.

The possibilities of official payments assistance, which the IMF has especially inaugurated, must in the future be given special emphasis. The provision of liquidity by the Fund, above all through an appropriate accommodation of IMF quotas, should provide the means. The combination of financing and accommodation, which the IMF in its lending policy guarantees—according to the terms of "unconditionality" of IMF credits—offers the best prospect for the re-establishment of total economic balance in those nations beset with difficulties.

In a period of economic stagnation the accommodation process is especially painful.

Devaluation and inflation would quickly jeopardize the expected growth and employment effects of monetary policy and force that policy to be reversed.

No nation can expect adjustment without a long range view of the process. Our common task is not to allow limited and negligible problems from spreading out in all directions in uncontrollable proportions. In order to guarantee this, we must manage the problems in common. We should view the present difficult situation as a challenge and an opportunity which must be seized, in the interest of our economic future, which in this phase of stagnation is gripped by structural weaknesses which have become clearly evident. ■

DEUTSCHE ZUSAMMENFASSUNG

Das wirtschaftliche Wachstum ist nahezu zum Stillstand gekommen. In einer Periode der wirtschaftlichen Stagnation ist der Anpassungsprozess besonders schmerzhaft. Kein Land kann sich dem aber auf längere Frist entziehen. Die gemeinsame Aufgabe ist es, begrenzte und überschaubare Risiken nicht zu einem Flächenbrand sich ausbreiten zu lassen. Man sollte die gegenwärtige schwierige Lage auch als Herausforderung und Chance begreifen, die in dieser Stagnationsphase deutlich erkennbar gewordenen strukturellen Schwächen im Interesse unserer wirtschaftlichen Zukunft jetzt zügig anzupacken. Die Arbeitslosigkeit hat Rekordhöhen erreicht und belastet das soziale Klima ebenso wie die öffentlichen Haushalte. Schwache Nachfrage und hohe Kosten beeinträchtigen die Ertragslage vieler Unternehmen und hemmen damit die innovativen Kräfte, die für ein dauerhaftes wirtschaftliches Wachstum unentbehrlich sind. In solcher Lage sind anhaltend hohe Zinsen ein zusätzlicher Hemmschuh.

Die rezessiven Entwicklungen beschäftigen die Wirtschaftspolitiker nicht nur, soweit sie sich innerhalb der Grenzen der eigenen Volkswirtschaften vollziehen. Die enge Verflechtung der nationalen Märkte lässt mit dem Rückgang der Wirtschaftstätigkeit auch den Welthandel stagnieren, von dem normalerweise positive Impulse auf die einzelnen Länder ausstrahlen. Der Bazillus der Rezession droht sich damit über die nationalen Grenzen hinweg auszubreiten. Besonders deutlich treten die äusseren Einflüsse auf die einzelnen

nationalen Volkswirtschaften in jüngster Zeit bei den finanziellen Verflechtungen hervor, nachdem die zunehmende Auslandsverschuldung eine Reihe von Ländern vor erhebliche Probleme bei der Finanzierung ihrer Zahlungsbilanzdefizite stellt.

In dieser Situation kommt es entscheidend darauf an, dass die Wirtschafts- und Währungspolitik nationale und internationale Fehlentwicklungen rechtzeitig erkennt und die Weichen für die Zukunft richtig stellt.

Noch im Frühjahr dieses Jahres herrschte die Erwartung vor, dass es in der Bundesrepublik zu einer konjunkturellen Belebung kommen werde. Diese Erwartung erfüllte sich nicht. Die wichtigsten Indikatoren lassen vielmehr eine anhaltende Stagnation befürchten.

Damit sind die Voraussetzungen für den Abbau der extrem hohen Arbeitslosigkeit, das für die Bundesrepublik zur Zeit dringlichsten Problems, im Augenblick nicht günstig. Der Anstieg der Arbeitslosigkeit ist nicht nur auf den konjunkturbedingten Abbau von Arbeitsplätzen zurückzuführen, sondern auch auf den Eintritt geburtenstarker Jahrgänge ins Berufsleben, die zunehmenden Erwerbsneigung der Frauen mittleren Lebensalters und den immer noch nicht ganz versiegten Zustrom ausländischer Arbeitskräfte.

Neben all den trüben Auspizien gibt es allerdings einige Anzeichen dafür, dass die Stimmung in der deutschen Wirtschaft gegenwärtig eher noch schlechter ist als die tatsächliche Lage.

Ein fundamentales Problem, das die wirtschaftlichen Perspektiven in den letzten Jahren stark überschattete, kann inzwischen als weitgehend überwunden gelten: das extreme ausenwirtschaftliche

Ungleichgewicht der Jahre 1979-81, das besonders die Geldpolitik vor schwierige Aufgaben gestellt hatte.

Mit dem Umschwung in der deutschen Leistungsbilanz ging auch eine spürbare Erholung des Aussenwerts der D-Mark einher, nachdem die D-Mark seit 1979 an den Devisenmärkten beträchtlich an Wert eingebüsst hatte. Das Startzeichen dafür gaben die geldpolitischen Massnahmen der Bundesbank vom Februar 1981, die zunächst den Zinsabstand zum Dollar reduzierten und ußerdem dazu beitrugen, dass sich das Vertrauen in die D-Mark wieder festigte.

Auch die Entwicklung des Preisniveaus in der Bundesrepublik gibt Anlass zu vorsichtigem Optimismus. Von temporären Einflüssen abgesehen haben die Preissteigerungsraten abnehmende Tendenz. Im September 1982 gab es erstmals wieder eine "Vier vor dem Komma." Dazu hat die Verbesserung der "Terms of Trade" dank niedrigerer Öl- und Rohstoffpreise und des stärkeren Wechselkurses ihren Beitrag geleistet.

Die insgesamt massvolle Entwicklung der Tariflöhne im Jahre 1982 dürfte auch einen Beitrag dazu geleistet haben, dass sich die Ertragslage der deutschen Unternehmen im Verlauf des Jahres merklich besserte; die Ertragslücken der vergangenen Jahre wurden freilich bisher nicht voll ausgeglichen.

Einstweilen wird der stärker gewordene Zustrom an Eigenmitteln von den deutschen Unternehmen offenkundig dazu genutzt, die finanzielle Konsolidierung voranzutreiben. Es dürfte also trotz staatlicher Massnahmen der Investitionsförderung (Abschreibungs erleichterungen, Investitionszulage) länger als in früheren Konjunk-

turzyklen dauern, bis sich verbesserte Finanzierungsmöglichkeiten in höheren Investitionen niederschlagen. Unsicherheiten über die künftige weltwirtschaftliche Entwicklung oder über den Kurs der Wirtschafts- und Finanzpolitik können sich dabei dämpfend auf die unternehmerischen Investitionsentscheidungen auswirken.

Damit die Konsolidierung möglichst bald in die erhoffte Investitionsphase überleitet, sollten der Wirtschaft neue Belastungen im Tarifbereich oder in Form kostenwirksamer Arbeitszeitverkürzungen möglichst erspart bleiben.

Die Handlungsmöglichkeiten der Wirtschaftspolitik sind im Vergleich zu früheren Jahren in verschiedener Hinsicht eingeschränkt. Dies gilt vor allem für die Fiskalpolitik, die in der Bundesrepublik ebenso wie in vielen anderen Ländern nur begrenzten Spielraum hat. Wenn sie vermeiden will, dass die öffentliche Beanspruchung der Kreditmärkte die Finanzierung privater Investitionen behindert und nachfolgende Generationen mit einer riesigen Hypothek öffentlicher Schulden belastet werden, muss sie der Konsolidierung der öffentlichen Haushalte Vorrang geben.

Über die öffentlichen Kassen einschliesslich der Sozialversicherungen werden gegenwärtig rd. die Hälfte des Sozialprodukts geleitet. Ein Anziehen der Steuer- und Abgabenschraube über das erreichte hohe Mass hinaus muss deshalb nach Kräften vermieden werden, wenn leistungshemmende Wirkungen und Steuerumgehungen—etwa in Form der Schattenwirtschaft—in Grenzen gehalten werden sollen.

Ein anderer seit Jahren anhaltender Trend bei den öffentlichen Kassen gibt auch im laufenden Jahr Anlass zur Besorgnis. Die Investitionsquote der öffentlichen Hand ist weiter rückläufig. Hier ist eine Umkehr dringend erwünscht. Nicht ein weiterer Anstieg der öffentlichen Ausgaben, sondern Umschichtungen zugunsten vermehrter Investitionen sind geboten, damit aus dem öffentlichen Bereich wieder Anstoss für Wachstum und Beschäftigung ausgeht.

Wegen der engen Grenzen, die der Fiskalpolitik für die Wiederankurbelung der Wirtschaft gegenwärtig gezogen sind, bleibt die Geldpolitik der Bundesbank weiterhin besonders gefordert. Wie der rasche Abbau der Zinsen an den deutschen Finanzmärkten seit Herbst 1981 zeigt, hat sich die Bundesbank dieser Herausforderung gestellt. Die seitherige Zinsentwicklung hat die Wirtschaft auf der Finanzierungsseite erkennbar entlastet. Die Bundesbank hat damit den Spielraum konsequent genutzt, den ihr die

Entwicklung des amerikanischen Zinsniveaus eröffnete. Weitergehende kreditpolitische Entlastungen für die Wirtschaft werden auch künftig mit davon abhängen, dass der Zinssenkungsprozess in den USA anhält und sich möglichst verstärkt. Die Erfolge der amerikanischen Notenbank bei der Inflationsbekämpfung lassen die Chancen dafür nicht ungünstig erscheinen, auch wenn die Haushaltsdefizite in den USA weiter ansteigen. Allerdings ergeben sich weitere Handlungsmöglichkeiten in Richtung zusätzlicher Lockerung der deutschen Geldpolitik nur in dem Masse, wie das Stabilitätsziel nicht gefährdet wird. Das Geldmengenziel der Bundesbank für 1982 lässt jedenfalls noch einen gewissen Handlungsspielraum für zinsenkende Massnahmen.

Das Bemühen der Bundesbank, innen- und aussenwirtschaftlichen Bedürfnissen bei der Gestaltung ihrer Geldpolitik gleichermaßen Rechnung zu tragen, hat zeitweilig auch Anlass zur Kritik gegeben. So wurde der Bank nahegelegt, die Geldpolitik stärker an konjunkturellen Zielen auszurichten und die Wirkungen einer solchen Politik auf die Wechselkurse zu vernachlässigen. Diesem Rat ist die Bundesbank unter anderem auch deshalb nicht gefolgt, weil sie ausländische DM-Halter nicht zu einer Flucht aus der D-Mark mit allen abträglichen Folgen, die das hätte, veranlassen wollte.

Die Bundesbank hat sich auch ein anderes Konzept der "Befreiung" von internationalen Zinszwängen nicht zu eigen gemacht, das in der Europäischen Gemeinschaft zeitweilig erörtert wurde, nämlich eine eigenständige europäische Niedrigzinspolitik. Ein solches Konzept hätte selbst dann wenig Chancen, wenn sie—wie von manchen befürwortet—durch Kapitalverkehrskontrollen abgesichert werden könnte. Dabei bliebe die Freiheit des Geld- und Kapitalverkehrs auf der Strecke, in der wir ein notwendiges Korrelat des freien Waren- und Dienstleistungsverkehrs sehen und die wir deshalb für unverzichtbar halten.

Es ist auch nicht zu übersehen, dass in der Weltwirtschaft Kräfte am Werk sind, die in protektionistischen Eingriffen ein Rezept zur Überwindung akuter Schwierigkeiten sehen. In kritischen Perioden ist die Versuchung immer gross, die Lösung drängender Probleme wieder stärker in nationalen Alleingängen zu suchen. Dieser Versuchung muss aber mit Festigkeit widerstanden werden, wenn die Fehler der zwanziger und dreissiger Jahre vermieden werden sollen. Gerade die Tatsache, dass unsere heutigen Probleme weltweiter Natur sind, macht die Kooperation unter den Ländern umso nötiger.

Das gilt ohne Einschränkungen auch

für die Bewältigung der Probleme, die in jüngster Zeit an den internationalen Finanzmärkten offenbar geworden sind. Die internationalen Kredit-, Geld- und Finanzmärkte haben nicht zuletzt wegen des "Recycling" hoher Ölpreisbedingter Zahlungsbilanzüberschüsse der OPEC-Länder Jahre ausserordentlichen Wachstums hinter sich. Die hohe Effizienz dieser Märkte und ihre Flexibilität haben in dieser Zeit einen wichtigen Beitrag zur Finanzierung grosser Ungleichgewichte im internationalen Zahlungsgefüge geleistet. Eben diese beachtliche Leistungsfähigkeit hat aber zugleich in dem Masse die Basis für die jetzt offen vor uns liegenden Schwierigkeiten geschaffen, wie die Verschuldung einzelner Länder dabei zugenommen hat. Die Währungsbehörden sollten sich darüber verständigen, ihre Überwachungs- und Steuerungsfunktion, die sie im nationalen Rahmen wirkungsvoll erfüllen, stärker auf diesen Bereich auszuweiten. Zu deutlich liegen die Risiken des internationalen Kreditgeschäfts zutage. Die Spannungen, die sich an den internationalen Kreditmärkten nun zeigen, machen die Dringlichkeit kooperativer Vorkehrungen deutlich. Aber auch auf nationaler Ebene müssen wo nötig zusätzliche Schritte zur Beherrschung der grösseren gewordenen Risiken getan werden. Dazu gehört, was die deutschen Banken und Bankniederlassungen im Ausland angeht, die umgehende Verpflichtung zu konsolidierter Rechnungslegung, ohne die eine umfassende Risikoabschätzung nicht möglich ist.

Offenkundig hat die Effizienz der internationalen Finanzmärkte zeitweilig zuviel Spielraum bei der Finanzierung von Zahlungsbilanzdefiziten eröffnet und die reale Anpassung wurde eher vernachlässigt. Diese Fehlentwicklung sollte möglichst umgehend—mit Augenmass—korrigiert werden. Die Korrektur aussenwirtschaftlicher Ungleichgewichte ist zwar der beschwerlichere, aber auf Dauer der einzige Weg aus der gegenwärtigen Krisensituation.

Die Möglichkeiten offizieller Zahlungsbilanzhilfe, wie sie insbesondere der IWF eröffnet, müssen in Zukunft wieder grösseres Gewicht erhalten. Die sich anbahnenden Entscheidungen zur Mittelausstattung des Fonds vor allem im Wege einer angemessenen Anpassung der IWF-Quoten sollten hierfür die Voraussetzungen schaffen. Die Kombination von Finanzierung und Anpassung, die der IWF in seiner Ausleihpolitik—aufgrund der "Konditionalität" der IWF-Kredite—gewährleistet, bietet die beste Aussicht für die Wiedergewinnung des gesamtwirtschaftlichen Gleichgewichts in den betroffenen Ländern.

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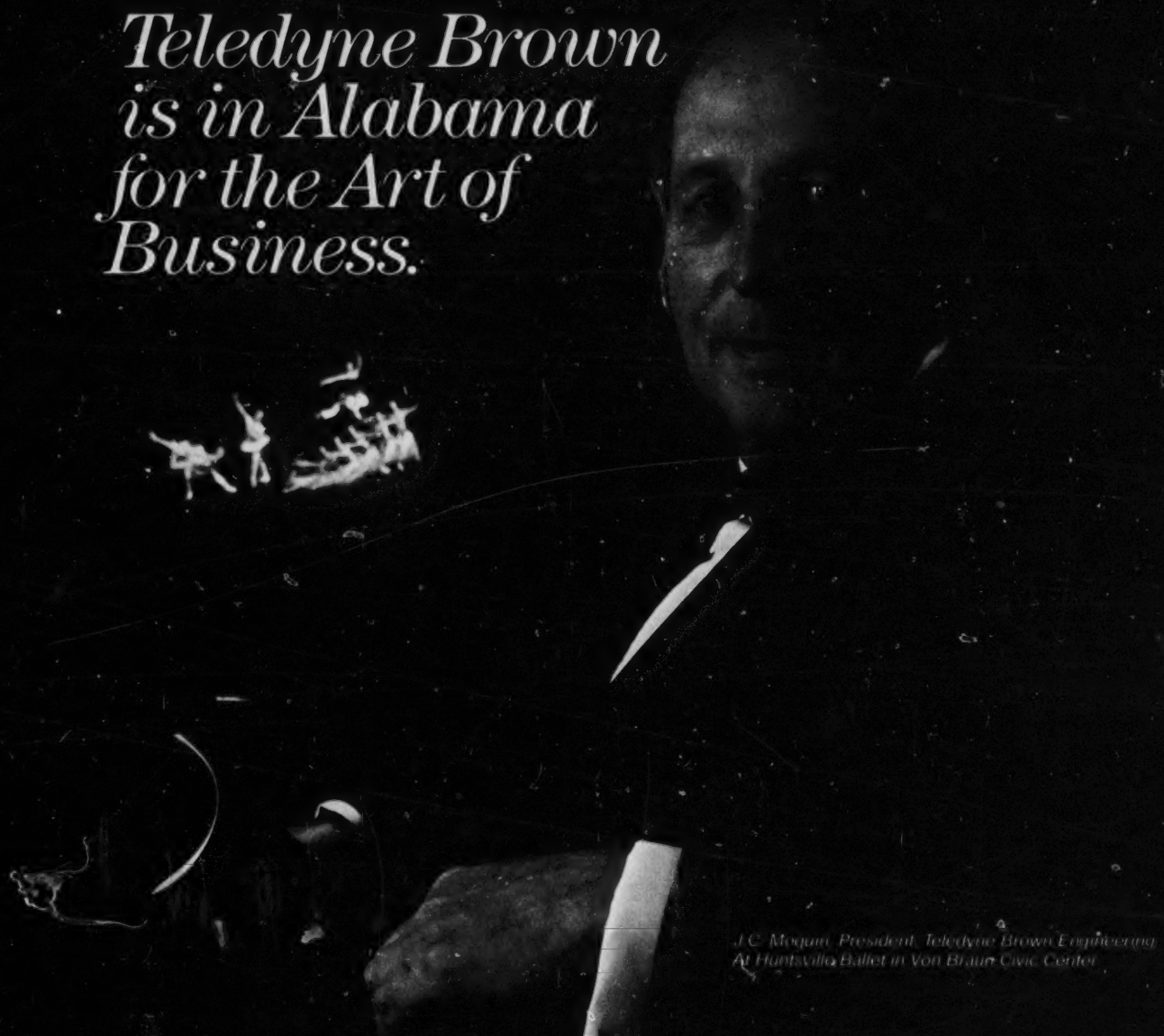
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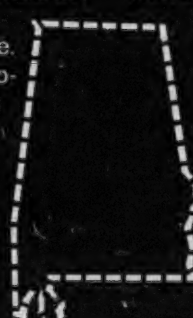
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The View from Washington

I have often expressed my concern about the critical need to break the inflationary momentum that had come to grip the nation in the 1970's and spoken of the indispensable role that monetary policy has to play in that effort. At the same time, I have emphasized the extra difficulties that result from placing too heavy a burden on monetary policy alone in the fight on inflation—difficulties manifested in exceptionally heavy pressures on financial markets and interest rates, and therefore on credit-dependent sectors of the economy.

The American economy has been in recession for some months. The recession has some of the characteristics of earlier downturns. But it seems to me plainly wrong to think of the current state of the economy as simply reflecting "another" recession.

Rather, we are seeing the culmination of a much longer period of unsatisfactory economic performance extending well back into the 1970's—performance marked by poor productivity, growing unemployment, much higher interest rates, and pressures on the real earnings of the average citizen and on the real profits of our businesses.

A number of factors have contributed to that deterioration in our performance, not

all of them completely understood. But one pervasive element—an element particularly relevant to monetary policy—stands out: we found ourselves in the midst of the most prolonged inflation in our history, and that inflationary process had come to feed on itself. Incentives were distorted. Too much of the energy of our citizens was directed toward seeking protection from future price increases and toward speculative activity, and too little toward production. Increasingly depressed and volatile capital markets reflected the uncertainties. Effective tax rates increased as inflation carried taxpayers into higher brackets. But, in a sluggish economy, those revenues did not keep up with our spending plans and programs.

Against that background, the notion that

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we might comfortably live with inflation—or that we could accept inflation in the interest of strong growth—was exposed as an illu-



by Paul Volcker
Chairman, Board of Directors,
Federal Reserve Bank

The notion that we might comfortably live with inflation—or that we could accept inflation in the interest of strong growth—was exposed as an illusion.

sion. I believe it is fair to say a clear national consensus emerged that turning back inflation had to be a top priority of economic policy—that a stable dollar is a necessary part of the foundation of a strong economy.

Monetary policy has a key role to play in restoring that stability, and our policies are directed to that end. But recent developments have confirmed again that ending an inflation, once it has become deeply seated in expectations and behavior, is not a simple and painless process. The problems can be aggravated if too much of the burden rests on one instrument of policy. And the effort to restore stability will be more difficult to the extent policies feed skepticism and uncertainty about whether the effort will be sustained—a skepticism rooted in past failures to “carry through.” Monetary, fiscal, and other public policies are constantly scrutinized—in financial markets and elsewhere—to detect any signs of weakening in the sense of commitment to deal with inflation. To speed the transition to lower interest rates and healthier capital markets, to reduce the costly elements of anticipated inflation built into wage and price contracts, to permit more confident planning for the future—to, in fact, lay the base for *sustained* recovery—credibility in dealing with inflation has to be earned by performance and persistence.

The current recession has been superimposed on a pattern of stagnation extending over a number of years. We are also seeing signs of potentially more lasting changes in attitudes of business and labor toward pricing, wage bargaining, and productivity.

Current developments both reflect needed progress on the inflation front and reinforce my concern about the burdens placed on monetary policy to bring about and sustain that progress. In the best of circumstances, ending an inflation, once it has become embedded in behavior and expectations, can be painful in the short run, however necessary that effort is to our future strength and prosperity. The hard fact is the economy is now in the grips of a second recession in as many years. Recent developments have some of the characteristics of earlier cyclical downturns. But the current recession has been superimposed on a pattern of stagna-

tion extending over a number of years—years characterized by a rising trend of unemployment, lagging productivity, and particularly strong pressures on the older industrial sectors and regions. And, even now, after months of rising unemployment, interest rates have remained painfully high, delaying recovery in some important sectors of the economy.

In broad terms, I don't think there is any great mystery as to why the economy and financial markets have behaved in this way. During the 1970's, inflation increasingly became viewed as a way of life, and in the process economic incentives were distorted and our productive energies sapped. As we lost our most important financial yardstick—a stable dollar—interest rates rose and became highly volatile. As monetary policy moved to deal more forcefully with the inflation—particularly in a context of fiscal imbalance—the strain on financial markets became more acute. But the alternative course of trying to accommodate to inflation by providing excessive monetary growth would offer no lasting relief—and probably little respite even in the short run—for that approach would only feed inflationary expectations and reinforce the reluctance of lenders to commit funds for any substantial period of time ahead.

Now we can see clear signs of progress on the inflation front. A reversal of the pattern of the inflation rate ratcheting higher in each successive economic cycle would be an event of profound importance, not least in encouraging a return to much lower and more stable interest rates. We cannot “prove” that we have yet turned that corner. Indeed, some of the progress against inflation reflects the more immediate and temporary effects of recession-weakened markets, the pressures of extraordinarily high interest rates on commodity and other sensitive prices, and recent surpluses in petroleum and grain production. But we are also seeing signs of potentially more lasting changes in attitudes of business and labor toward pricing, wage bargaining, and productivity. Not surprisingly, the effort is most clearly apparent in industries where costs and wages have been most out of line, where international competitive pressures are particularly intense, or where regulatory change has encouraged greater price competition. But, I believe the pattern is likely to spread, “building in” lower rates of increase in nominal wages and prices over time. And, as the inflationary and cost pressures ease, the economy can resume a healthy growth pattern, with greater job opportunities, increasing productivity, and higher real wages.

But if that bright prospect is to be



achieved, we simply cannot afford now—just as the disinflationary process is beginning to take hold and beginning to be believed—to abandon our monetary vigilance. Past failures to “carry through” have left a legacy of skepticism and uncertainty among workers and businessmen, among consumers, and among participants in financial markets where lenders demand “inflation” and “uncertainty” premiums when committing their funds. Credibility in dealing with inflation will have to be earned by performance and persistence over time. Prudent fiscal and other policies must help in achieving that credibility. But I believe it is broadly and rightly recognized that, whatever those other policies, appropriate restraint on the expansion of money and credit will continue to be fundamental to restoring price stability.

Developments during 1981 were broadly consistent with the continuing effort to reduce growth of money and credit to non-inflationary levels over time. There were, to be sure, some divergent movements among the various monetary and credit aggregates that we target. Those movements are largely explicable in terms of technological and regulatory change—the introduction of NOW accounts nationwide, the enormous growth of money market funds, and other factors affecting the preferences of the public for different types of financial assets. Specifically, M1-B growth (adjusted for the estimated shift of funds into NOW accounts) decelerated further last year, averaging, over the year as a whole, a little more than 1 percent below the previous year—the third consecutive year of lower growth. From the

fourth quarter of 1980 to the fourth quarter of 1981, M1-B growth (adjusted) was 2.3 percent, a little more than 1 percentage point below the lower end of the target that we had indicated was desirable at mid-year. The growth of the broader aggregate M2—about 9½ percent over the four quarter period—was a bit higher than in 1980, partly reflecting the extraordinary growth in money market funds.

As you know, the money supply increased particularly sharply in the early weeks of 1982, following fairly large increases in November and December. Increases of that size are unusual when production and incomes are weak, and the recent rise appears to be related in considerable part to the desire of individuals to place marginally more of their assets in highly liquid form. Interest rates, after falling sharply last fall, retraced part of that decline in January and early February, partly because the rising money supply was reflected in renewed pressure on bank reserve positions. More recently, monetary growth appears to be moderating, and bond markets have rallied.

These recent movements, in my mind, emphasize again two relevant points in assessing our monetary targets and their implications. First, in a large and complex economy, short-term fluctuations in money supply data—for a month or even a quarter, and much more so from week to week—can be anticipated as consumers and businesses adjust their holdings. So long as the trend is appropriate, those short-term fluctuations should have no important implication for economic activity or inflation.

Second and more fundamentally, our

Our targets are, by design, limited to amounts necessary to finance real growth in a framework of declining inflation.

targets are, by design, limited to amounts necessary to finance real growth in a framework of declining inflation. The stronger the inflationary momentum, and the more pressure on credit markets from other directions, the greater the risk that high interest rates will squeeze out housing, investment, and other private activity supported by

in the same sense they are predicated on the assumption and prospect of a further decline in the rate of inflation.

The fact is that consolidating and extending our progress on inflation will require continuing restraint on monetary growth, and we intend to maintain the necessary degree of restraint. That restraint, by provid-

What is so disturbing is that the current services budget (taking account of the Administration's defense program) shows a sharply rising deficit.

borrowing.

We believe the targets for 1982 (reaffirming tentative targets set out last July) will be consistent with recovery in business activity over the second half of the year. Our target range for M1 of 2½ to 5½ percent was consistent with growth in money over the year as a whole larger than during 1981, and the Federal Open Market Committee has suggested that, as things now stand, growth in the upper part of the range would be acceptable. The FOMC also suggested M2 growth toward the upper end of its 6-9 percent range (the same as last year) would also be acceptable. But these ranges also imply a "tight fit,"

ing assurance that inflation will continue to decline, should over time be a powerful influence in bringing down interest rates as well, particularly in the long-term area. Indeed, prospects for any lasting relaxation of interest rate pressures would be dim without the continuing monetary discipline that success against inflation requires.

For the more immediate future, interest rate prospects depend crucially on other factors as well, and I am fully aware that interest rates are vitally important to the timing, strength, and sustainability of economic recovery. The most important of those "other" factors is surely the outlook for the Federal

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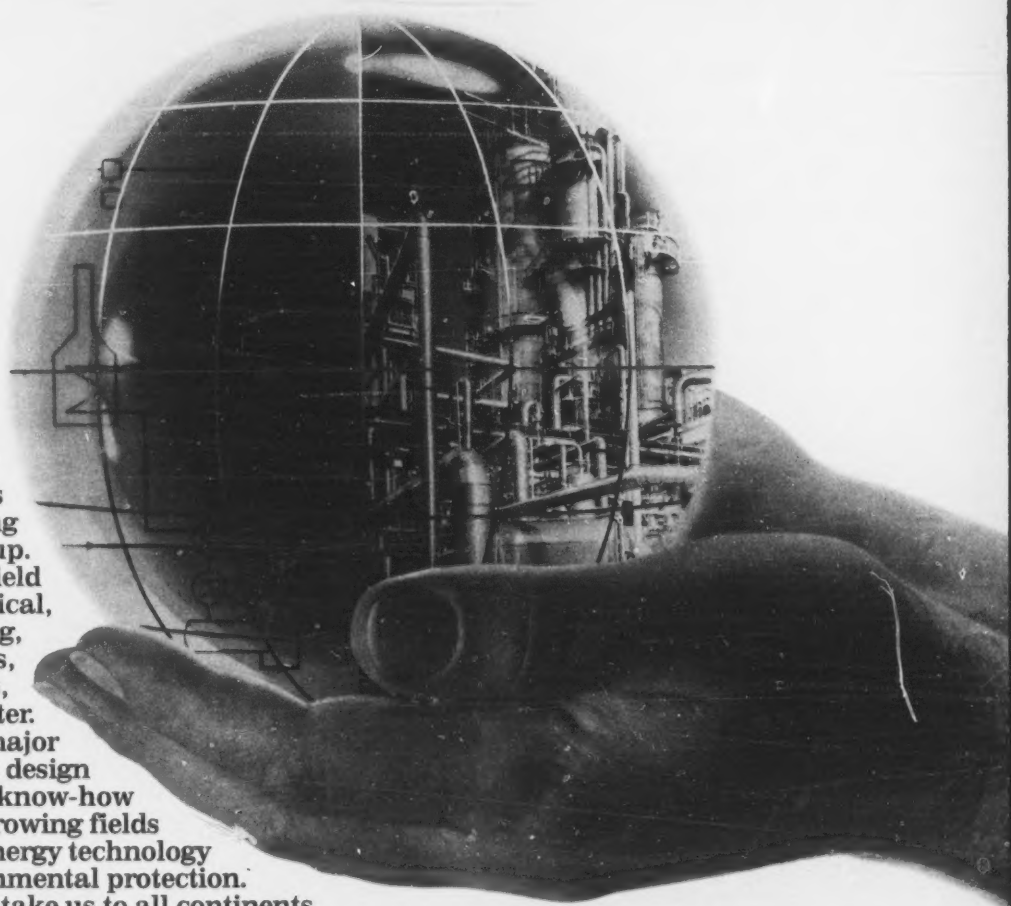
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deficit, and it is a factor directly within your own purview.

As you know, this year, fiscal 1982, we will have a very large Federal deficit—on the order of \$100 billion. To a considerable extent, that deficit is a reflection of the recession, as it reduces revenues and raises outlays. In the particular circumstances of today, the current deficit, to a large degree, acts as an "automatic stabilizer" for the economy. The financing load should be manageable in a context of reduced credit demands by other sectors.

As we look ahead to 1983 and beyond, the situation is quite different, and that is the source of my concern about the budgetary situation. What is so disturbing is that the current services budget (taking account of the Administration's defense program) shows a sharply rising deficit, even if we assume revenues are lifted and spending restrained by rather strong recovery. All the estimates before you, by the Administration, by the Congressional Budget Office, or by private forecasters, point in the same direction. In the absence of action to close the potential gap, the deficit will rise to about \$150 billion or more in fiscal 1983, and to still larger amounts in later years. Looking at the same situation in another way, even if we assumed the unemployment rate would soon drop back to six percent or so—about the level of the best recent years—we would be faced with large and rising deficits unless strong new measures are taken to contain them.

In recognition of this outlook, the Administration has, as you know, proposed substantial measures to reduce the potential deficit for fiscal 1983, and the years beyond. The emphasis is on spending reductions, but

sistent with the expansion in private investment we seek, and have sought to encourage through tax reduction and other measures.

The problem is not simply one for the future—for 1983 and 1984 and beyond. Financial markets constantly look ahead—any lender or borrower tries to anticipate and "discount" what lies ahead. Anticipations of a future "squeeze" are translated into present high interest rates, into a desire to "stay short" in lending, into a reluctance to set into motion plans to build and to invest. Moreover, the deep-seated public instinct that sustained large deficits will lead, sooner or later, to pressure to create more money to finance those deficits, or will otherwise stimulate inflation, undercuts the effort to restore stability.

I would also point out that, even with measures as large as those proposed by the Administration, we would be left with historically high deficits in relation to GNP or our probable savings potential, as the projected recovery proceeded. And those projections have little margin for misjudgment of the underlying trend in spending or revenues, in interest rates, in the inflation rate and the like—areas where any projection has an element of uncertainty. I note, in that respect, that projections of the existing budgetary gap by the Congressional Budget Office run somewhat higher than those of the Administration.

The potential for continuing squeeze on financial markets could be alleviated by increases in business and personal saving. Such saving has been abysmally low in recent years. Greater price stability, positive real interest rates, and the tax measure introduced last year, all should work in the direction of greater savings. But to count on

The potential for continuing squeeze on financial markets could be alleviated by increases in business and personal saving.

some revenue measures are proposed. That program is estimated to reduce the projected fiscal gap by \$56 billion in 1983 and \$84 billion in 1984. If enacted, as proposed, it would go a very considerable way toward dealing with the fiscal problem.

As you consider those and other proposals, I must emphasize the threat that, unless substantial budgetary actions are undertaken, private borrowers would be squeezed out of the market, with adverse consequences for homebuilding, for business investment, and for other credit-dependent sectors. In other words, the budgetary outlook, as it stands, does not seem to me con-

a dramatically large increase in savings to "bail" us out of the budgetary problem would be to miss the point, at best. We need larger saving to finance higher levels of business investment and housing construction; we cannot afford to have it dissipated in financing prolonged excessive deficits—deficits that, as matters stand, would absorb, or more than absorb, a reasonable projection of increased savings.

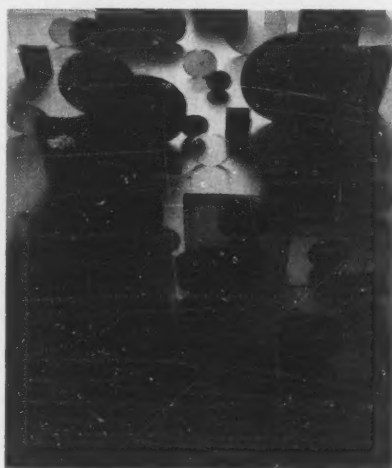
Given the nature of the problem before us, and the clear risks of underestimating the size of the budgetary problem, I can only conclude that the Congress should set its sights for still larger budgetary savings, keep-

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ing in mind the widening gap now projected beyond fiscal 1983.

Credible steps to assure substantially declining Federal deficits as the economy expands, looking toward balance as we restore satisfactory levels of unemployment, would be enormously helpful in resolving some of the problems in our financial markets today. Indeed, such action could have a galvanizing effect in bringing about lower interest rates because it is concern about the budgetary prospects that preoccupies the thinking of many powerful investors in the market today.

In carrying the primary responsibility for tax legislation and for certain large spending programs, your Committee has the excruciating job of translating general budgetary objectives into concrete legislation. You must make choices involving social, national security, and programmatic considerations far beyond the purview of the Federal Reserve or my competence. As a purely economic matter, I do believe that, in general, lower taxes—particularly lower marginal income tax rates—will permit the private economy to perform more effectively, tending to increase incentives and to reduce distortions. From that standpoint, spending control clearly deserves priority. But to the extent the needed job cannot be done by expenditure control alone, I see no alternative to considering new sources of revenue.

The difficult economic circumstances of today should not blind us to the fact that we have much upon which to build. We can see the tangible progress against inflation. The Administration and the Congress have taken action to spur productivity, work, and savings through the tax system. The inexorable upward trend in spending has been bent lower. Regulatory reform is underway.

From that perspective, what we need is not any basic change in direction, but a sense of urgency and persistence in "carrying through." That has clear implications for continued discipline in monetary policy. And it has direct implications for dealing with the budgetary problem that looms so large before you.

Seldom, in my experience, has the challenge been so clear for all to see. And seldom has there been so strong a consensus on the need to meet it with bold measures. It is those facts that give me confidence that you and your colleagues, working with the Administration, will find the way to reconcile the competing priorities among the particulars of spending and revenue decisions in a way consistent with needed reduction in the deficit. The quicker that can be done, the brighter, in my judgment, will be the outlook for the economy. ■

DEUTSCHE ZUSAMMENFASSUNG

Ueber die dringende Notwendigkeit, die seit den siebziger Jahren herrschende Inflation einzudaemen und die bedeutende Rolle, die der Geldpolitik in diesem Zusammenhang zukommt, ist oft gesprochen worden. Es waere aber falsch, den Kampf gegen die Inflation lediglich auf geldpolitische Massnahmen zu beschaerlen, da dies einen extremen Druck auf die kreditabhaengigen Wirtschaftszweige hervorrufen wuerde.

Die augenblickliche Rezession traegt einige Zuege frueherer Konjunkturlauten, laesst sich aber insgesamt nicht mit diesen vergleichen. Wir sehen vielmehr das

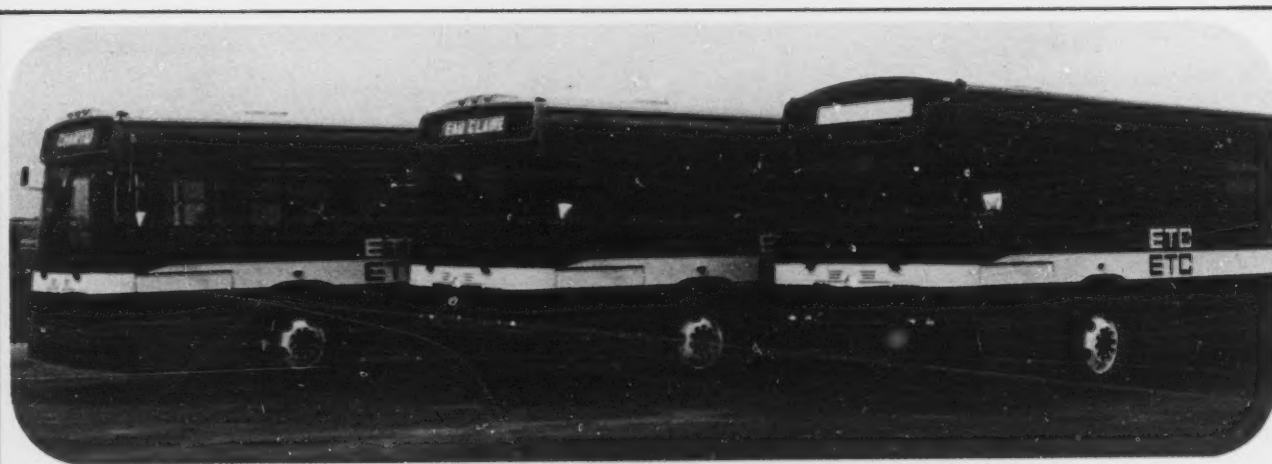
Ergebnis einer unbefriedigenden wirtschaftlichen Entwicklung, die durch geringe Produktivitaet, steigende Arbeitslosigkeit, hohe Zinsen sowie eine Belastung der Realeinkommen gekennzeichnet war. Die Hauptursache fuer den Leistungsabfall liegt darin, dass wir uns mitten in einem Inflationsprozess befinden, der sich mittlerweile selbstaendig gemacht hat. Es wurde mehr Energie fuer Spekulation als fuer Produktion aufgebracht, und diese Situation spiegelte sich in unruhigen Kapitalmaerkten und steigenden Effektivzinsen wider.

Vor diesem Hintergrund erwies sich die Annahme, man koenne auch mit der Inflation leben—oder sie doch wenigstens im Interesse eines hohen Wachstums hinnehmen—, als Illusion. Der Weg zu einer wirksamen Inflationsbekaempfung ist lang und steinig, da sich die Oeffentlichkeit mit der Inflation abgefunden hat.

Ob die Bemuehungen Erfolg haben

werden, haengt weitgehend davon ab, ob es gelingen wird, Zweifel und Ungewissheit hinsichtlich der Bestaendigkeit und Wirksamkeit der Massnahmen auszuraeumen. Vertrauen kann nur gewonnen werden, wenn der eingeschlagene Weg konsequent verfolgt wird.

Es ist kein Geheimnis, wie Wirtschaft und Kapitalmaerkte in die gegenwaertige Lage geraten sind. In den siebziger Jahren wurde die Inflation als selbstverstaendlich hingenommen. Wirtschaftliche Anreize gingen ins Leere und unsere Produktionskraft wurde ausgelaugt. Mit dem Verlust der Dollarstabilitaet einher gingen Zinsschwankungen und Zinssteigerungen. Das Anziehen der Geldpolitik setzte die Geldmaerkte erheblich unter Druck, aber die andere Alternative—naemlich Anpassung an die Inflation—haette nur Inflationserwartungen gestaerkt und langfristige Anlagen verhindert. In der Inflationsbekaempfung sind klare Anzeichen einer Erholung zu erkennen. Zwar beruht diese Erholung zum Teil auf unmittelbaren und zeitlich beschaernten Reaktionen inflationsgeschwaechter Maerkte, aber es deutet sich zweifellos ein dauerhafter Wandel an. Wenn dieses Bemuehen auch am auffaelligsten in Wirtschaftszweigen in Erscheinung tritt, die ungewoehnlichem Druck durch Kosten und Wettbewerb ausgesetzt waren, so ist doch



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davon auszugehen, dass sich diese Entwicklung mit der Zeit insgesamt in der Form von geringeren Einkommens- und Preissteigerungen durchsetzen wird. Zu diesem Zweck muessen wir weiterhin in der Geldpolitik Vorsicht walten lassen, um Skepsis und Unsicherheit durch Leistung und Bestaendigkeit auszuraeumen. Daher muss eine Politik verfolgt werden, die durch Umsicht und Zurueckhaltung wesentlich zur Stabilisierung beitraegt. Im Jahre 1981 wurde dieses Ziel im grossen und ganzen verfolgt, obwohl es in dem Paket geld- und kreditpolitischer Massnahmen auch gegenlaeufige Bewegungen gab, so etwa die Einfuehrung von NOW Accounts (Negotiable Order of Withdrawal) und das enorme Wachstum von Geldmarktanlagen. Insbesondere das M1-B Wachstum (M1-B Wachstum umfasst die Sichteinlagen—ohne die Einlagen von Auslaendern und oeffentlichen Einrichtungen—plus die umlaufenden Banknoten und Muenzen sowie neueren Formen von Sichteinlagen wie NOW Accounts) hat sich im vergangenen Jahr erneut verlangsamt und blieb um etwa ein Prozent unter dem des Vorjahres. Vom vierten Quartal 1980 bis zum vierten Quartal 1981 betrug das M1-B Wachstum 2,3% und lag mit etwas mehr als einem Prozent unter dem fuer Mitte des Jahres angestrebten Ziel. Das M-2 Wachstum (M-2 umfasst M-1 B sowie die meisten Formen

von Spareinlagen, Anlagen in Geldmarktpapieren und in Eurodollars) lag etwas hoeher als 1980. Der Anfang 1982 verzeichnete Anstieg des Geldvorrates scheint im wesentlichen auf dem Wunsch von Privatleuten nach hoeherer Liquiditaet zu beruhen.

Die Tatsachen, dass die Zinsen im Januar und Februar weiter gesunken sind, sich in juengster Zeit das Geldwachstum etwas zu verlangsamten scheint und sich die Anleihemaerkte erholt haben, zeigen erneut, worauf bei der Zielsetzung im Finanzbereich besonderes Augenmerk zu richten ist. Einmal ist davon auszugehen, dass kurzfristige Schwankungen in der Geldversorgung vorhersehbar sind. Zum anderen ist zu vermeiden, dass durch hohe Zinsen kreditabhaengige private Initiativen im Keim erstickt werden. Unser Kampf gegen die Inflation erfordert weiterhin Beschraenkung des Geldzuwachses und maessige Zinsen.

Die Aussichten fuer das kommende Jahr geben Anlass zur Sorge, da der Voretat ein stark steigendes Defizit aufweist und sich—falls keine Gegenmassnahmen ergriffen werden—im Haushaltsjahr 1983 auf ueber \$150 Mio. belaufen wird. In Anbetracht dessen hat die Regierung defizitbeschraenkende Massnahmen ins Auge gefasst, wobei Ausgabeeinschraenkungen an erster Stelle rangieren. Ohne diese

Massnahmen kann die auch mittels Steuererleichterungen angestrebte Expansion im Bereich der privaten Investitionen nicht erreicht werden. Da die Finanzmaerkte stark zukunftsorientiert sind, schlaegt sich dieses Problem auch auf die gegenwaertige Marktlage nieder.

Der Druck auf die Finanzmaerkte koennte durch Zunahme der Spartaetigkeit auf dem Geschaefis- und Privatsektor verringert werden, obwohl auch dies keine Dauerloesung darstellt. Unter diesen Voraussetzungen sollte der Kongress groessere Einsparungen anstreben. Weiterhin koennten durch Senkung des Bundesdefizits bei gleichzeitiger Expansion der Wirtschaft und Verringerung der Arbeitslosigkeit Zinssenkungen erreicht werden, da die gegenwaertigen Aussichten eine Grosszahl potentieller Anleger von Investitionen abhalten. Es gilt nun, diese Ziele mittels konkreter gesetzgeberischer Massnahmen zu verwirklichen, wobei Steuersenkungen besondere Bedeutung zukommt.

Trotz der gegenwaertigen schwierigen Lage sind Ansaetze einer Erholung der Wirtschaft nicht zu uebersehen, die durch Bestaendigkeit und Ausdauer weiter ausgebaut werden koennen.

Die Tatsache, dass das Problem und seine Loesung so offen zu Tage liegen, gibt Anlass zu Zuversicht und Vertrauen in die Zukunft.

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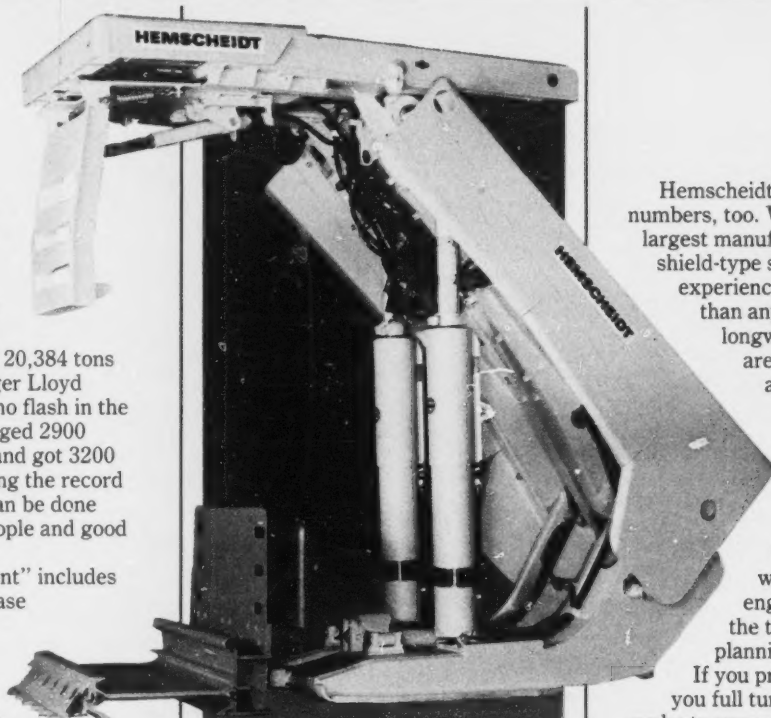


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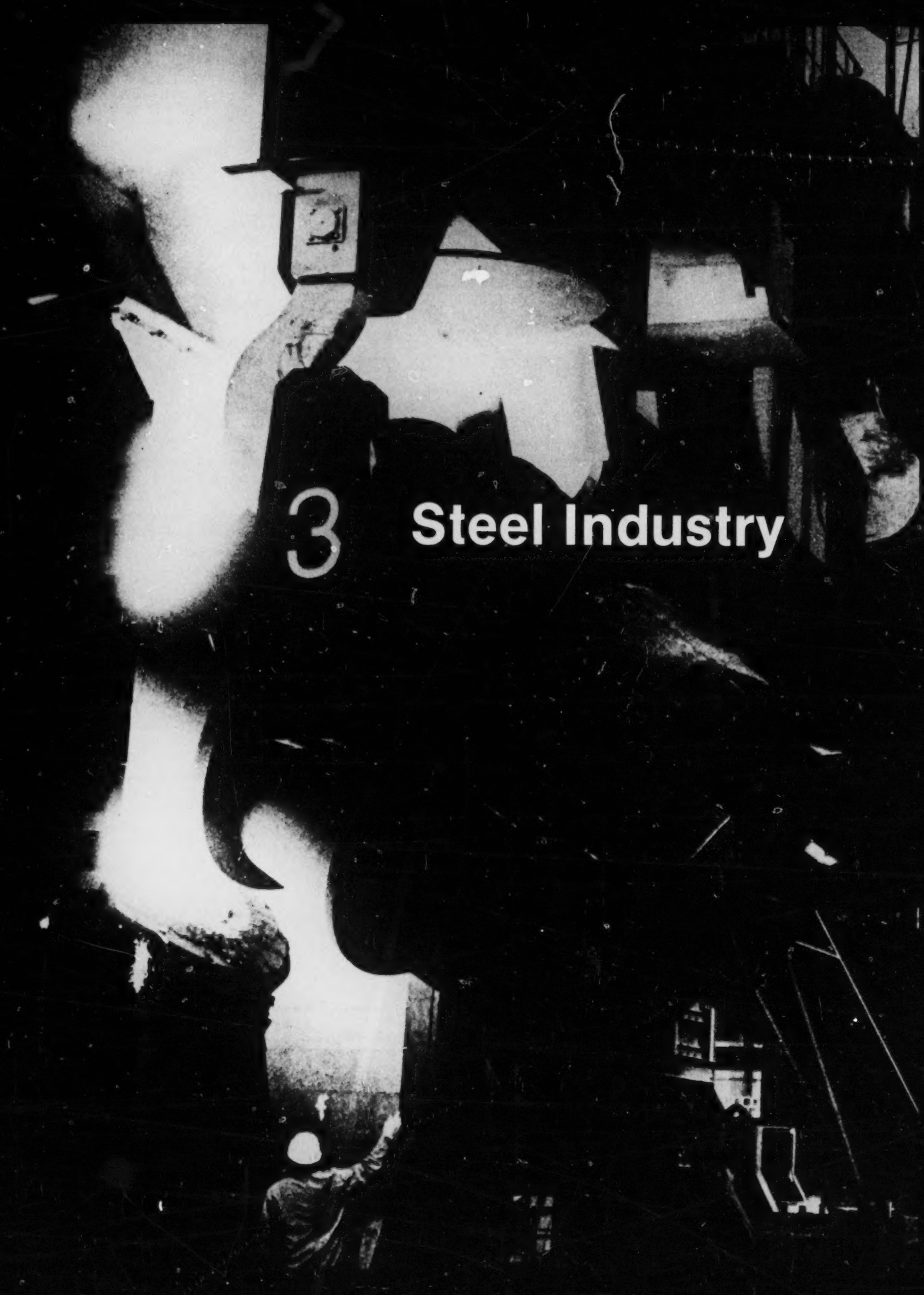
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3

Steel Industry

The German Steel Industry: An Overview



by Dr. Ruprecht Vondran
Wirtschaftsvereinigung Eisen-
und Stahlindustrie

More than many other products, steel is dependent upon gross economic conditions. These conditions have not developed positively in the course of 1982. The hopes for an economic upturn, which were expressed at the beginning of the year, have not been fulfilled. Moreover, recessive forces have persisted through the second half of 1982. While domestic demand has been falling for the last two years, the drop in foreign demand—which previously had been healthy—has been decisive in the worsening of the total economic picture. This depression has been stronger than expected and has been most keenly felt in the areas of investment, raw materials, and production goods. The construction sector continues to find itself in a serious crisis. In view of rapidly falling contracts industrial production in the

inventory levels, rising imports from third countries, and falling exports have meant a marked drop in raw steel production. If one considers present production as a 1982 high, then the total production of the German steel industry will reach a level of 30M tons.

The number of employees declined by 5% inside of one year. In the Fall of 1982 almost half the industry's labor force worked short shifts.

In all major regions of the world economic developments point to a deepening of the recession. Therefore the steel market will remain cast in the shadow of stagnation. Even if Germany and the western industrial nations were successful in improving economic conditions in a relatively short period of time—here recent experience can only allow skepticism—it would still require considerable time until the investment level permanently strengthened. Only then can the economic situation in the steel market together with the short term-oriented crisis measures of the European Commission contribute to a stabilizing of the situation.

The grounds for pessimistic expectations in the German steel industry—which has always been one of the most capable in the world—are over and above all of structural origin. Production for 1982 remained about

The grounds for pessimistic expectations in the German steel industry are of structural origin.

second half of 1982 has been choked off.

The development of the steel market has therefore in 1982 been more negative than expected. Declining steel consumption, high

25% below that for the boom year 1974. The steel crisis is thus in its eighth year and not only in the Federal Republic of Germany: the sharp interruption on the demand side at the end of 1974 in connection with the worldwide steel boom in the early 1970's thrust the world steel industry into a deep crisis, which has proved the longest in the history of the European steel industry

The steel industries in the member states of the European Community have reacted to this crisis with various adjustment strategies. Most nations have attempted to maintain current employment levels in the industry through a policy of subsidization. In part, new production capacity was built up, even though potential supply already exceeded demand. According to the estimation of the Iron & Steel Association, since 1975 DM180 billion of public funds have been poured into the steel industries of Belgium, France, Great Britain and Italy, or have been appropriated through 1983.

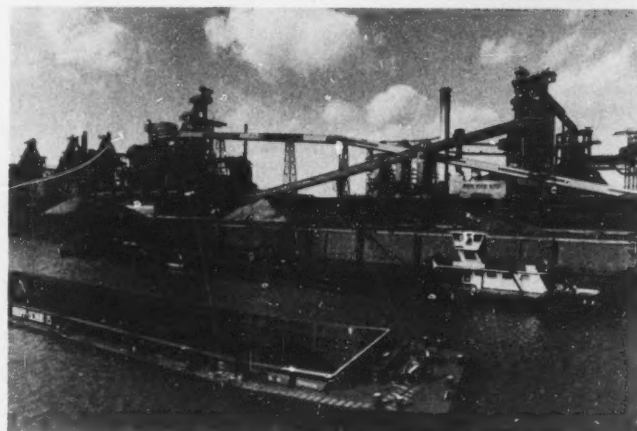
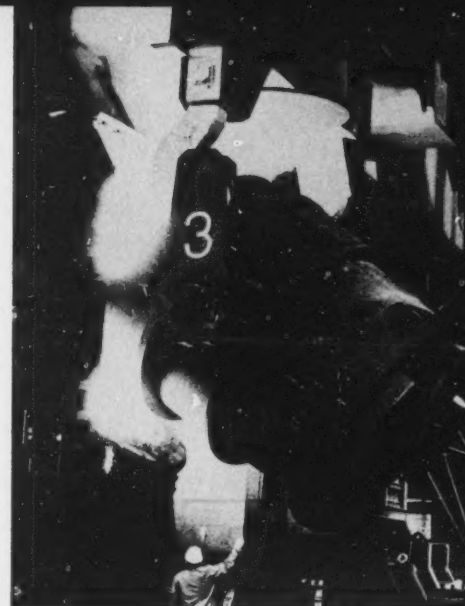
The German steel industry has, in contrast, had to solve its problems without substantial assistance from public funds. The only exception to this general premise has been the steel industry in the Saar region. Here the Federation and State government disposed funds for investment out of considerations of regional policy. The Federal government on July 7, 1981 created a general policy program for the steel industry. Out of this framework as yet no means have been disposed. Upwards to DM1.7B were to have been distributed in the course of four years. Probably the volume will be considerably smaller. A large portion of this was intended not for the steel industry itself, but for the creation of alternative employment opportunities.

It must be admitted that the attempt to limit the subsidy war in Europe through an agreement has failed. Instead the flow of state funds into the steel industries of our neighbors has, since the formation of the steel codex, become more apparent. The German steel industry has since had to reckon with unfair competitive conditions inside the European market. This is one of the main worries which burden us at the present time. On one hand, since the establishment of the European Monetary System, tariff-barriers have been reduced. Subsidized goods find unhindered access to markets in the Federal Republic of Germany. Because of different considerations in several EC states, the steel market in Europe finds itself undergoing a great test of its survivability.

The producers in the German steel industry, in comparison to many others in Europe, have from an early date tried to match

supply to current demand: In the last twenty years, the number of workers in the German steel industry has fallen off at a faster pace than in other countries. In the Federal Republic of Germany, just short of 30% of jobs in the industry have been rationalized, while in the EC this has only been about 20%. In the course of the steel crisis, 20 blast furnaces with a raw iron capacity of 10M tons/year, 100 steel plants with 18M tons/year, and approximately 50 rolling mills with a capacity of 8.5M tons/year have been shut down. This adjustment, combined with modernization and concentration in new efficient plants, has moved the German steel industry along under its own power.

The European Commission has attempted to solve the problem of over capacity with a crisis program. Through production quotas, the implementation of which is the task of

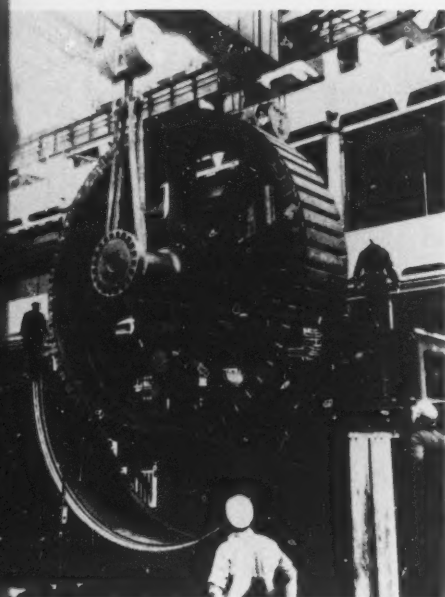


the voluntary organization of the European steel industry, EUROFER, the EC attempts to stabilize prices. Since we cannot count upon a change in this policy of subsidization, given present circumstances, there is no alternative to this quantity regulation in the European steel market. A healthy German steel industry will not be able to withstand a lengthy European subsidy war.

Problems have also developed in foreign trade. Barriers to export affect the steel industry of the Federal Republic of Germany essentially because of the large quotient of exports of German production (in comparison to that of the US industry, which serves a large domestic market, and for which exports play only a subordinate role).

Political crisis in the steel importing nations have direct impact on their imports. Iran and Turkey, traditional important markets for German steel goods, are only two examples. And in the foreseeable future our markets in these countries will not regain their previous importance.

In addition, several developing countries



now press the German market with aggressive pricing policies. In the course of the year 1982 this development has markedly increased. In the past half of 1982 imports from the third world represented 15 percent of the total German consumption of rolled steel—an unprecedented amount. When one takes into consideration German rolled steel imports from other countries in the EMS, the overall import quotient of the total German market reaches about 40 percent. This share is considerably higher than that in the USA.

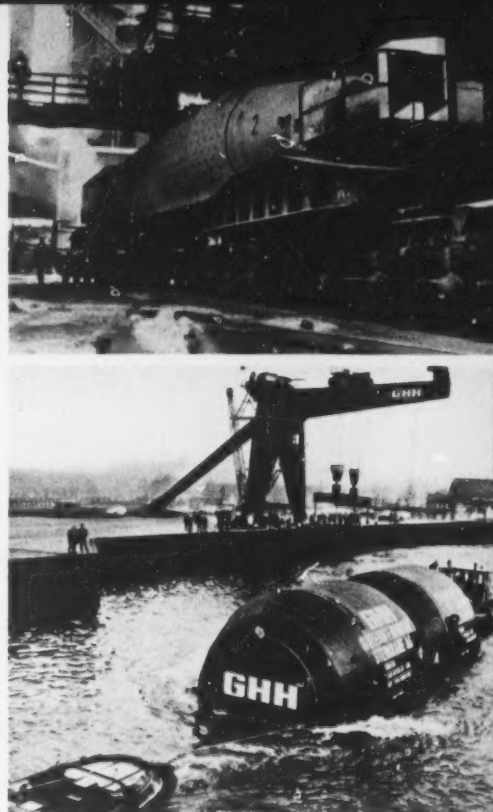
The above problems present a great challenge for the German steel industry. These problems have been keenly exacerbated by the continuing steel conflict between the European Community and the United States. The following uncertainty—especially the question of whether the applied punitive tariffs will be enforced—has effected a marked drop in Europe and West German export activity in the U.S. market.

Unfortunately, in recent decades there have always been import limitations in the USA. These protectionist efforts have taken various forms: the US steel industry applied anti-dumping proceedings wherever possible. In the majority of cases these have not borne positive fruits to the claimant. The US steel industry instead pursues a policy of conscious self-limitation. Corresponding treaties were concluded which treated steel imports from Japan and the EC during the years 1969-1974. Trigger prices were introduced in 1978 and again in 1980. From the beginning this system has been looked upon positively by the German steel industry. But in applied practice this measure has proved to be an instrument of thoroughgoing protectionism. The American industry cannot be spared of the accusation that the suppression of import competition has led to the collapse of the trigger prices.

The Federal Republic of Germany has not subsidized its steel industry. German firms had no difficulty in demonstrating this.

With the investigation of over 100 countervailing duty and anti-dumping processes, in January 1982 the American steel industry inaugurated a massive attack against rising imports. Such an action makes little sense, since American producers are not in the position, in large segments of the industry, to cover domestic requirements. This fact has been noted by American experts.

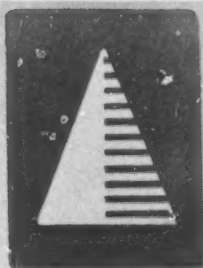
The German steel industry was also included in the countervailing duty action



initiated in January 1982. Over 80 percent of all German rolled steel exports to the US were affected. In this action the US took for granted that European government subsidies created market distortions in the United States. In distinction to other nations, the Federal Republic of Germany has not—with the exception of the Saar region—subsidized its steel industry. The German firms had no difficulty in demonstrating this. The decision of the ITC accordingly reflected this; the customs fine affixed to German steel was only marginal, compared to that applied to most European suppliers.

Likewise, in January 1982 a series of Anti-Dumping actions was instigated against German firms. Long before the favorable decision of the US Department of Commerce was reached, it was not necessary for the German producers to exhaust their legal resources in their own defense. They were certain that they would be able to sufficiently disclaim these allegations as well.

The nine month-long European steel conflict was ended in October 1982. The EC agreed to reduce its American market share for ten products to below 5.73 and 6.3 percent. All pending legal actions which had been instigated by the US steel industry have been withdrawn. The German steel industry has thereby undertaken a considerable sacrifice. Through its readiness to compromise, it has made its contribution to exorcize trade conflict from the world. ■



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DEUTSCHE ZUSAMMENFASSUNG

Die zu Beginn des Jahres 1982 gehegten Hoffnungen auf eine Konjunkturwende haben sich nicht erfüllt. Die Rezession wirkte sich vor allem auf den Stahlmarkt aus, der in hohem Masse von gesamtwirtschaftlichen Daten abhaengig ist. Zu der seit zwei Jahren ruecklaeufigen Nachfrage aus dem Inland trat ein ueberraschendes Nachlassen der zuvor lebhaften Nachfrage aus dem Ausland. Die Ursachen fuer die bisherige Entwicklung des Stahlmarktes liegen im nachlassenden Stahlverbrauch, hohen Lagerbestaenden, steigenden Importen aus Drittlaendern sowie sinkenden Exporten. Auch fuer das Jahr 1983 muss mit einer Ausweitung der Rezession gerechnet werden, die selbst bei guenstigen Rahmenbedingungen kurzfristig nicht gestoppt werden kann. Diese Prognose stuetzt sich auf strukturelle Gruende. Der tiefe Einbruch der Nachfrage nach Stahl Ende 1974 stuerzte die Weltstahlindustrie in eine Krise, von der sie sich bis heute nicht erholt hat. Die meisten Mitgliedstaaten der EG versuchen, durch eine auf Erhaltung von Arbeitsplaetzen und Verlustausgleichen gerichtete Subventionspolitik den Beschaeftigungsstand zu erhalten.

Die deutsche Stahlindustrie—mit Ausnahme des Saarlandes—musste dagegen ohne nennenswerte Hilfe aus oeffentlichen Kassen zurechtkommen. Ein von der Bundesregierung 1981 verabschiedetes Stahlprogramm wird vorwiegend fuer die Schaffung alternativer Arbeitsplaetze von Bedeutung sein. Es ist nicht gelungen, dem Subventionsweitlauf in Europa durch einen Kodex Einhalt zu gebieten, so dass sich die deutsche Stahlindustrie innerhalb des europaeischen Marktes in einem Wettbewerb zu ungleichen Bedingungen zu behaupten hat, da infolge des Abbaus der Zollschranken seit Gruendung der Montanunion subventioniertes Material ungehindert Zugang in die BRD findet. Im Gegensatz zu den uebrigen europaeischen Laendern strebte die deutsche Stahlindustrie fruehzeitig durch Einsparung von Arbeitsplaetzen, Stilllegungen von Hochoefen, Stahlwerksaggregaten und Walzstrassen eine Anpassung des Angebotes an den Bedarf an. Darueber hinaus ergeben sich Probleme im Aussenhandel, da politische Krisen im Ausland wegen des relativ hohen Exportanteils der deutschen Markt. Zu den genannten Problemen trat 1982 der Stahlkonflikt zwischen der EG und den USA, der einen merklichen Rueckgang der europaeischen und bundesdeutschen Lieferungen in die USA bewirkte. Durch

protektionistische Bemuehungen versuchten die USA, Beschraenkungen der Stahleinfuhr zu erzielen. Die Triggerpreise, deren Einfuehrung zunaechst begruesst worden war, erwiesen sich letztendlich als ein weitgehend protektionistisches Instrument. Mit Antraegen auf Einleitung von ueber einhundert Countervailing Duty- und Antidumping-Verfahren griff die amerikanische Stahlindustrie die gestiegenen Importe an, obschon sie nicht in der Lage ist, allein den Stahlbedarf des Landes zu decken. In dem Verfahren wurde geltend gemacht, staatliche Subventionen in Europa verursachten Stoerungen auf dem US-Markt. Den deutschen Unternehmen fiel jedoch nicht schwer nachzuweisen, dass in der Bundesrepublik mit Ausnahme des Saarlandes keine staatlichen Gelder in die Stahlindustrie geflossen sind. Der Stahlstreit wurde im Oktober 1982 durch Abschluss eines Selbstbeschraenkungsabkommens beendet, in dem sich die EG verpflichtete, ihren Anteil am amerikanischen Stahlmarkt fuer zehn Erzeugnisse von 6,3% auf 5,75% zu reduzieren. Die US-Stahlindustrie zog daraufhin ihrerseits alle schwebenden Verfahren zurueck. Mit dem Abkommen nahm die deutsche Stahlindustrie Mengengerpfer in Kauf und stellte so ihre Kompromissbereitschaft unter Beweis.

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The American Steel Industry Faces the Competition

The text that follows is intended as an offering of one man's analysis of a major aspect of our present economic condition. Space will prevent filling in every detail, but the nature of how American business conducts business in today's international environment is of importance to more than corporate executives, economists and trade experts.

The reality of this changed—and changing—environment is just beginning to sink in, even though we've talked about it and felt its effects for a few years now. Coming to grips with its reality is the only way Americans will come to grips with the problems and the opportunities that a transformed world marketplace presents. The adaptations and accommodations that may be necessary are manifold, and not all of them will be happy experiences.

For most of our history as a nation, America maintained three parallel sets of relationships with foreign countries. Political concerns were considered diplomatic issues. Matters of national security were military in nature. Economic concerns were left essentially to the private sector to handle as best suited the occasion.

This all began to change with the 20th Century, and by the close of World War II

we were mixing those relationships according to need. But while our government began to use military and economic aid for diplomatic reasons and all the other combinations that the three areas provide, American business did not.

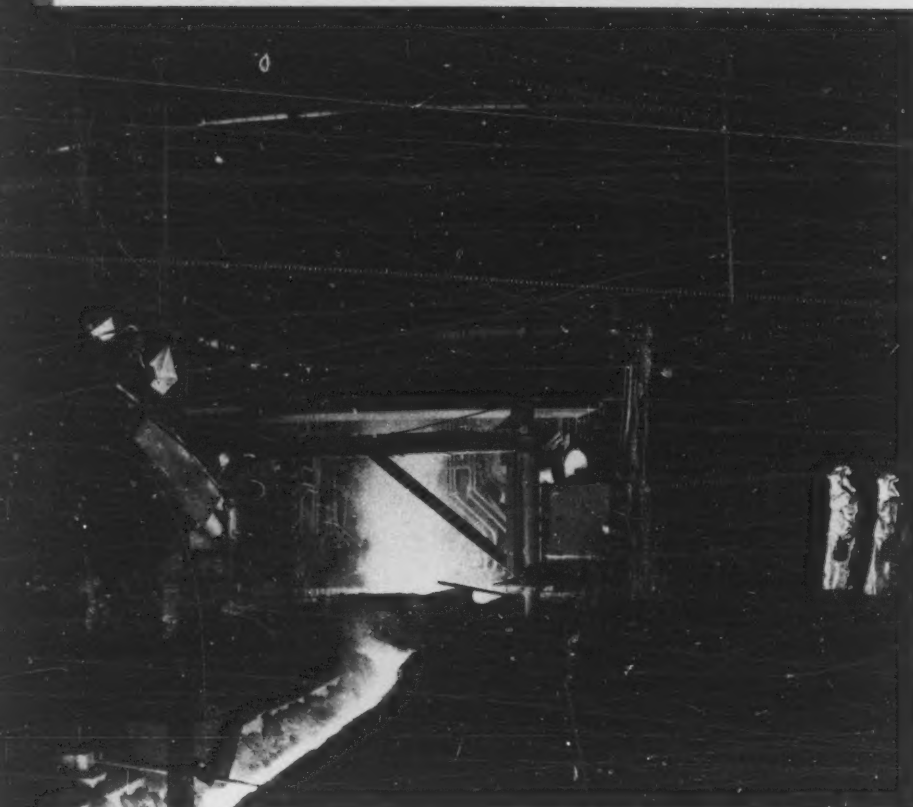
The size of our industrial machine... the wealth of our commerce... prompted and allowed not only unprecedented aid for the rebuilding of foreign economies, but it also lulled us into a belief that the American economic system would never have a serious rival. And for a while we did not. Armed with new technology, ample resources and American determination, we moved aggressively into the world economic arena. And we did so successfully! From the close of the nineteenth century until 1971, we never experienced a trade deficit.



by David M. Roderick
Chairman
United States Steel Corporation

From the close of the nineteenth century until 1971, we never experienced a trade deficit.

When economic competition in the world marketplace did begin to change character, few American businessmen were astute enough—nor were they willing enough—to observe that U.S. trade was beginning to go



both ways in radically new ratios. Timidity? Complacency? Pride? Whatever the reasons, we were slow to face up to the facts. We were accustomed to a favorable balance of trade. No one expected less. But the shifting trade habits of trading partners changed all that. What was an aberration in 1971 has become the pattern in 1982.

The disciplines of political science and economics came out of the older practice of political economics. The older designation may be a more apt description of the study and resulting awareness that U.S. businessmen must undertake and acquire. The appointment of a respected and able economist as Secretary of State suggests the synthesis is taking place at the federal level.

The global skirmishes of the 80's are not limited to the battlefield where military force seeks physical domination, or the psychological war for world opinion fought by the diplomatic corps. The battle I'm concerned about today is the one taking place in the world marketplace. It is an economic struggle, the outcome of which could have as telling an effect on us as any other, save a war of national survival. It is, in more modest terms, a battle for economic survival.

That such a statement could even be made about the world's most successful economic system underlines the gravity of the problem.

As in diplomatic and military relations, economic relationships operate on several levels at once. There is cooperation among

nations while friendly competition takes place. But there are rules that proscribe the competition—based on the sincerity of the cooperation. When one fails, the other is jeopardized, and there is either a compromise by accommodation or outright conflict. The latter is already very much in evidence around the globe.

Balancing international trading concerns with domestic needs is a ticklish art. It can be done. But when a multilateral trading system is no longer a useful purpose in and of itself, and becomes the vehicle for solving domestic political and social issues, the system breaks down.

The global competition for a productivity edge is two-pronged: favorable labor costs and technological superiority.

The global competition for a productivity edge is two-pronged: favorable labor costs and technological superiority. What we possess of the latter is eroded by the former.

Some countries subsidize basic industries such as steel to maintain full employment. Here in the United States, we have a kind of negative subsidy which certain industries pay for their work force. Several large industrial unions have, over the years, managed to win a substantial wage premium for their members, only to find that the market will not absorb that additional cost.

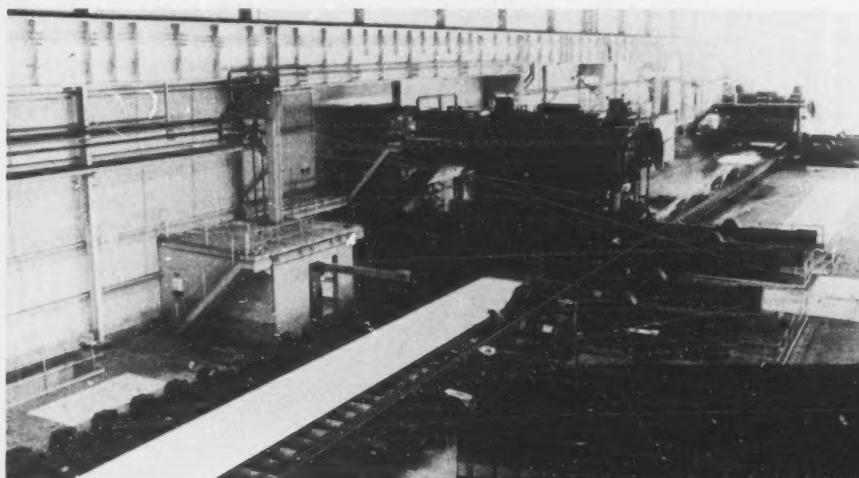
The competition for the market itself is finally based on price, quality and service. American producers can deliver the service and a quality product. But we cannot compete successfully if domestic labor costs and foreign government subsidies are permitted to continue unabated and unrelieved.

James Thurber once told the tale of the *fairly* intelligent fly that was too clever to be caught in a spider's web because he had been taught not to land where there were no other flies. He was finally trapped by landing where there were many other flies—on flypaper. The moral: There's no safety in numbers.

The truth of the matter is we in the U.S. are facing the most serious economic crunch in our international trading history. We are, unfortunately, *on our own!*

While there is a furious struggle throughout the world for each nation to perceive and protect its own interests, we seem to mindlessly ignore that trend. Yet we cannot continue to be aloof from it. While protectionism is not the answer, neither is ignoring trade abuses a solution.

Foreign aid and foreign trade should not be considered identical issues. One is a conscious government policy, the other a commercial function. Corporations capitalized by private investors cannot be expected to forgo profitable enterprise simply to further foreign policy objectives. And they can't be expected to compete successfully when the competition is unfair.



Foreign governments which subsidize their industrial sectors preclude true international competition. Seven western European nations suffered a collective loss of \$15.4 billion from 1975 through 1980 to maintain unprofitable steelmaking in their respective countries.

The difference between a concern for a nation's economic health and economic nationalism is profound. When competition is rigged or subverted or distorted, conflict is inevitable and retaliation builds upon retaliation.

In a good many trading areas, U.S. and foreign competitors have reached this point. It is time—for there is still time—to stop the clock, reinstate fair play and restore the goodwill.

Most of what I have said alludes principally to the first of the four worlds within our world—the capitalist countries. The second world—the Communist bloc—poses its own unique situation.

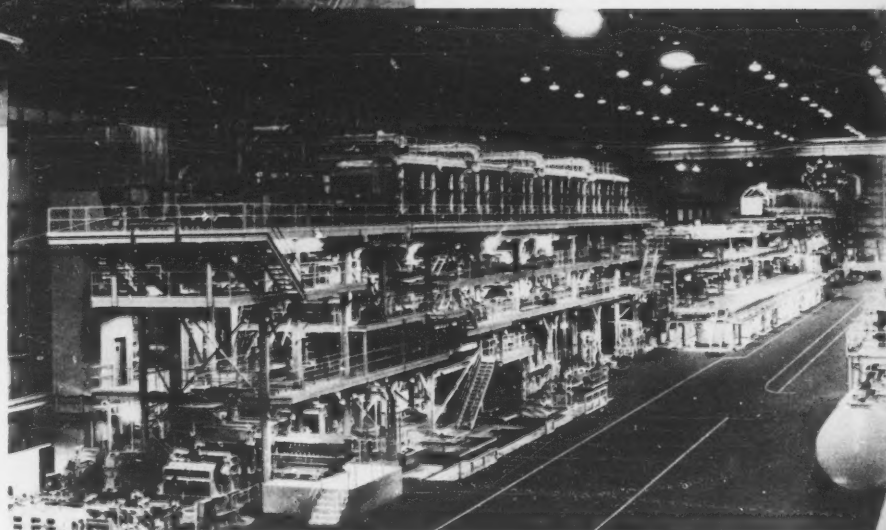
It is the third and fourth worlds where our experience is short and our performance uncertain.

The third world—the developing nations—is flexing its muscle. These countries are cleverly using their political clout and their control of strategic geographical areas and natural resources to enhance their economic development. And there is no track record of long historical cooperation to fall back upon when all else fails.

One English author wrote,

"There's a new foot on the floor, my friend. There's a new face at the door."

Well, there is to be heard the sound of many new feet on the floor, and there are many new faces at the door. And they are becoming significant competitors in the world economy! In 1950, for instance, 32 countries were steel-producing nations. By 1982, this number has jumped to 85.

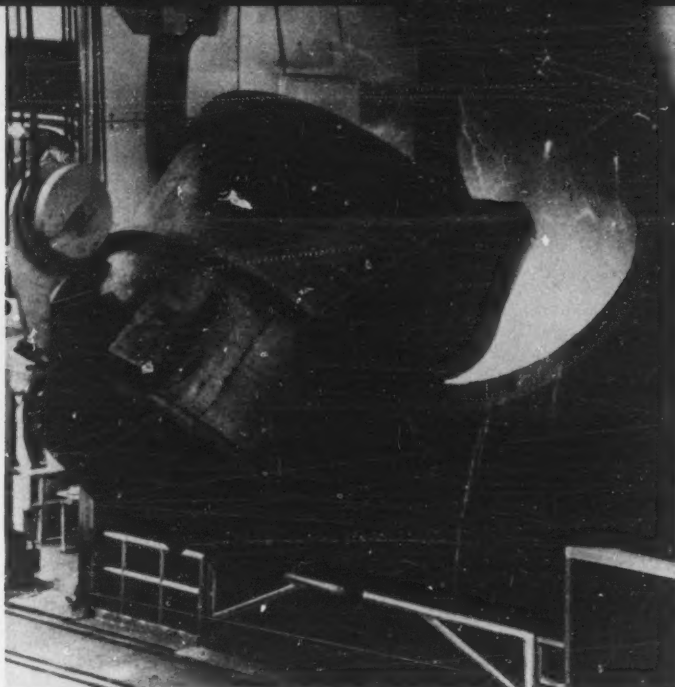


Global competition today centers on four major areas:

- 1) competition for capital
- 2) competition for resources
- 3) competition for a productivity edge, and
- 4) competition for the market itself.

The competition for capital in our own country is brisk. We have not yet solved our own problem of adequate capital formation. Meanwhile, the rising demands of developing nations for capital cannot be underestimated nor relegated to World Bank bureaucrats.

Foreign governments which subsidize their industrial sectors preclude true international competition.



And when capital is not recovered, or formed, it is often created out of thin air and at great peril to a domestic economy. The Brazilian government, for example, needs so much capital to service its debt—\$3 billion in 1982—that it has offered its own Treasury notes for sale. Interest rates there have risen to 140 percent with inflation running at 99.5 percent. The problem ripples over into Brazilian industry where in order to keep money from flowing out and in order to garner more foreign capital—fair trade and free trade are abandoned by slogan—"The Law of Similars" they term it. Their novel policy, translated into a few, no-nonsense words, means that anything that is made in Brazil cannot be imported without permission, regardless of the sufficiency of domestic production. And those products that are imported carry tariffs of between 45 to 205 percent.

The "Caucus of 77"—third world nations now numbering more than that—are demanding that developed nations supply capital to them for economic development.

And in order to insure this, they have resorted to the second competitive arena:

Third world nations are demanding that developed nations supply capital to them for economic development.

they have through cartels sought to control the supply... and fix the prices for certain products and materials under their exclusive or nearly exclusive control.

It is an economic blackmail that soon can be expected to spread to the fourth world—the undeveloped nations which in many

cases exercise control of strategic resources vital to the economic functioning of the rest of the world. Colonialism has not only had its day, it has had its comeuppance!

We cannot turn aside from the need to improve the economies of third world and fourth world nations. Yet our benevolence need not lack good sense. Nations cannot move from a primitive society to industrialized status in a few years. An agrarian society may be more agreeable to some than high technology life. One steel mill does not make a nation industrially independent.

Yet take the case of Pakistan. Diverting its attention from a profitable and potentially more successful agricultural program, to the building of heavy industry, Pakistan is constructing a \$2.5 billion steel plant in the desert to add to its fledgling steelmaking capability. The odds are not favorable: trained workers are in short supply, the iron ore and coal must be imported, transportation is primitive. Present steel production consumes one-fourth of the electrical power now used in their entire nation. All this to produce pig iron sold in India at prevailing world prices, but produced at *double* the cost. That's economic bad sense!

The new faces at the door are clamoring—not only for attention—but for a share of the world economy. That must not be denied them, but it must be earned *by* them. And it need not be at the sacrifice of our own economic health.

We are challenged to be more competitive... And if we fail, we will lose our standard of living in very short order. The slide down is a lot quicker than the climb up.

If world competition is conducted sensibly, if industries compete upon the basis of fair pricing and fair play, there will be a share of prosperity for all.

The solution is not, simply to redivide the world's wealth more ways, but to create new wealth, where the gain of one nation does not come at the expense of another.

That's been the basis of the American dream, not to redistribute wealth, but to create new wealth. How did we come to neglect this basic axiom?

We cannot ignore the changed circumstances of the world economy. We can both nurture the aspirations of the developing countries and keep the friendship of our historic trading partners—but only if there is *mutual* respect.

For us to remain out of the fray—unresponsive to *our* own legitimate needs and *our* own legitimate aspirations—is not laudable, but merely self-destructive.

It's not enough to be a little smart these days; I keep remembering the *fairly* intelligent fly. ■

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DEUTSCHE ZUSAMMENFASSUNG

Der Verfasser weist zu Beginn seiner Darstellung darauf hin, dass er seine persönliche Meinung äussert und argumentiert wie folgt:

Die Realitäten des geänderten und sich noch weiterhin verändernden internationalen Umfeldes, in dem die amerikanische Geschäftswelt ihre Aktivitäten entwickelt, werden erst in jüngerer Zeit so richtig begriffen. Die Einstellung auf die neue Realität wird eine Reihe von Anpassungen und Umstellungen notwendig machen, die nicht immer erfreulich sind.

Die Beziehungen Amerikas zum Ausland verliefen ursprünglich in drei parallelen Bahnen: Der politische Austausch war Sache der Diplomatie. Fragen der nationalen Sicherheit waren Sache des Militärs. Die Lösungssuche für ökonomische Probleme im Ausenbereich wurde im wesentlichen der Privatwirtschaft überlassen.

Mit dem Beginn des 20. Jahrhunderts, insbesondere nach dem Zweiten Weltkrieg, hat sich all das geändert. Die amerikanische Regierung begann damit, militärische und wirtschaftliche Hilfsleistungen für ihre (politischen) Zwecke einzusetzen, die amerikanische Geschäftswelt tat dies nicht. Die Grösse der US-Industrie und das Blühen des Handels erlaubte nicht nur eine vorher nie gekannte Assistenz an das Ausland beim Wiederaufbau der dortigen Wirtschaften, sondern sie liess die Amerikaner auch glauben, dass ihr eigenes Wirtschaftssystem niemals auf einen ersten Rivalen treffen würde. Im Besitz neuer Technologien, reicher Ressourcen und im Bewusstsein der eigenen Tatkraft, traten die Amerikaner entschlossen in die wirtschaftliche Weltarena ein. Und sie waren erfolgreich. Vom Ende des 19. Jahrhunderts bis 1971 haben sie niemals ein Handelsdefizit erwirtschaftet.

Als sich das Bild zu wandeln begann und die Konkurrenz auf den Weltmärkten härter wurde, war man in USA nur sehr zögernd bereit, die neuen Tatsachen anzuerkennen und sich darauf einzustellen. Man war an eine positive Handelsbilanz gewöhnt. Veränderte Handelsusancen der ausländischen Partner änderten jedoch das Bild. Was 1971 noch als Ausrutscher angesehen werden konnte, wurde 1982 schon die Regel. Die Auseinandersetzungen der achtziger Jahre werden nicht auf die Suche nach militärischem Übergewicht begrenzt bleiben oder auf das Ringen der US-Diplomaten um ein besseres Ansehen ihres Landes in der Welt. Die Auseinandersetzungen der achtziger Jahre werden auch auf den Weltmärkten stattfinden. Hier geht es um ein Ringen auf wirtschaftlichem Gebiet, dessen Ergebnis für die USA oder jedes andere Land an Bedeutung nur noch durch einen Krieg um das nationale Überleben übertroffen werden kann. Es ist ein Kampf um das wirtschaftliche Überleben.

Ebenso wie die diplomatischen und militärischen Beziehungen, laufen auch der wirtschaftliche Verkehr auf mehreren Ebenen gleichzeitig ab. Nebeneinander koexistieren freundliche Zusammenarbeit und wirtschaftlicher Wettbewerb. Es gibt jedoch Regeln für den Wettbewerb, die ihre Grundlage in der Ernsthaftigkeit der Zusammenarbeit finden. Wenn eine dieser beiden Komponenten brüchig wird, ist auch die Stabilität der anderen gefährdet, mit dem Ergebnis, dass entweder ein Kompromiss, ein neuer Interessenausgleich gefunden werden muss, oder dass es zum offenen Konflikt kommt. Die zweite Alternative kündigt sich bereits an, weltweit.

Es ist eine hohe Kunst, internationale Handelsinteressen und heimische Notwendigkeiten auszubalancieren. Wenn aber ein multilaterales Handelssystem aufhört, in sich selbst nützlich und zweckmässig zu sein und statt dessen zum Vehikel zur Lösung innenpolitischer und sozialer Probleme wird, dann bricht dieses System zusammen.

Entwicklungshilfe und Aussenhandel sollte man als zwei getrennte Bereiche sehen. Eines ist Gegenstand bewusster Regierungspolitik, das andere ist eine kommerzielle Funktion. Von Unternehmen, die mit dem Kapital ihrer Anteilseigner arbeiten, kann nicht erwartet werden, auf gewinnbringende Geschäfte zu verzichten, nur um damit ausserpolitischen Zielen zu dienen. Und man kann von ihnen kein erfolgreiches Bestehen im Wettbewerb erwarten, wenn dieser mit unfairen Mitteln betrieben wird. Ausländische Regierungen, die ihre Industrie subventionieren, verhindern echten internationalen Wettbewerb. Sieben westeuropäische Länder haben zusammen Verluste in Höhe von 15,4 Milliarden Dollar zwischen 1975 und 1980 hingenommen, um bei sich eine unrentable Stahlproduktion zu erhalten.

Es gibt einen grundsätzlichen Unterschied zwischen der Bemühung um eine gesunde nationale Wirtschaft und wirtschaftlichen Nationalismus. Wenn der Wettbewerb rücksichtslos ist, ausgehöhlt oder verfälscht, dann ist ein Konflikt unausweichlich, und es kommt zu einem Abtausch von Vergeltungsmassnahmen.

Es gibt bereits eine ganze Reihe von Handelssektoren, in denen amerikanische und ausländische Wettbewerber diesen Punkt erreicht haben. Es ist höchste Zeit—aber noch ist Zeit—, die Uhr anzuhalten,

"fair play" und "goodwill" wieder Vorrang zu geben.

Im wesentlichen beziehen sich die hier dargelegten Gedanken auf die kapitalistische Welt. Die sozialistischen Länder folgen ihren eigenen Prinzipien. Es sind die Länder der dritten und vierten Welt, denen gegenüber es wenig Erfahrung und nur ein ungewisses Konzept gibt. Die dritte Welt lässt ihre Muskeln spielen. Diese Länder werfen ihre politische Situation, ihre geostrategische Lage und ihre Rohstoffvorkommen bewusst in die Waagschale, um ihre wirtschaftliche Entwicklung zu stärken. 1950 gab es beispielsweise 32 Länder in der Welt, die Stahl produzierten. 1982 ist diese Zahl schon auf 85 gestiegen.

Der globale Wettbewerb konzentriert sich heute auf vier Hauptbereiche:

- Zugang zu Kapital
- Zugang zu Ressourcen aller Art
- Ringen um einen Produktivitätsvorteil
- Wettbewerb um die Märkte selbst

Der Kampf um Kapital ist hart. Selbst in den USA ist das Problem ausreichender Verfügbarkeit von Kapital noch nicht zufriedenstellend gelöst. Zwischenzeitlich treten die sich entwickelnden Länder der dritten Welt zunehmend an die Kapitalmärkte heran. Ihr Bedarf darf nicht unterschätzt werden; sie können nicht ausschliesslich an die Bürokraten der Weltbank verwiesen werden. Wenn kein Kapital beschafft oder geschaffen werden kann, wird es oft mit hohem Risiko für die heimische Wirtschaft kreiert. Brasilien ist ein Beispiel. Die Gruppe der 77, Länder der dritten Welt, deren Anzahl weit höher ist, als aus der Bezeichnung erkennbar, verlangt von den entwickelten Ländern Kapital zum Aufbau ihrer eigenen Wirtschaften. Um ihrem Verlangen Nachdruck zu verleihen, haben sie ihre Position im zweiten Hauptbereich weltweiten Wettbewerbs ausgebaut, dem Bereich Ressourcen. Sie bemühen sich um Errichtung und Erhaltung von Kartellen, um die Marktversorgung zu kontrollieren, und sie bestimmen die Preise für bestimmte Produkte und Materialien, die unter ihrer ausschliesslichen oder fast ausschliesslichen Kontrolle stehen.

Hier liegt wirtschaftliche Erpressung vor, die rasch auf die vierte Welt überspringen kann, auf die unterentwickelten Länder, die in einer ganzen Reihe von Fällen strategische Rohstoffe mit lebenswichtiger Bedeutung für die Wirtschaften des Restes der Welt kontrollieren.

Das weltweite Ringen um einen Produktivitätsvorteil hat zwei Komponenten: tragbare Lohnkosten und technische Überlegenheit. Was die USA auf letzterem Gebiet an Vorteil haben, wird durch die Nachteile im erstgenannten Feld

wieder aufgehoben.

Einige Laender subventionieren die Schwerindustrie, wie etwa den Stahlbereich, um die Vollbeschaeftigung aufrechtzuerhalten. In den Vereinigten Staaten verhalten sich die Dinge genau umgekehrt, die Stahlindustrie muss in Form von hohen Löhnen fuer andere Bereiche mitbezahlen. Die grossen Gewerkschaften haben im Lauf der Jahre beachtliche Lohnvorteile fuer ihre Mitglieder erkaempfen koennen. Jetzt jedoch muessen sie feststellen, dass der Markt fuer die Ueberbuerdung dieser Kosten nicht mehr aufnahmebereit genug ist.

Der Wettbewerb im Markt selber—und das ist der vierte der oben angesprochenen Punkte—beruht im wesentlichen auf den Preisen, der Qualitaet und den Serviceleistungen. Amerikanische Hersteller koennen mit Service und Qualitaetsprodukten aufwarten, sie koennen aber nicht preislich konkurrieren, wenn unrealistische Lohnkosten und auslaendische Regierungssubventionen weiterhin, wie bisher, das Bild verzerren.

Die USA stehen vor der ernstesten wirtschaftlichen ZerreiSSprobe ihrer internationalen Handelsgeschichte. Und leider sind sie dabei voellig auf sich selbst angewiesen.

Waehrend in der Welt ein heftiger Kampf der Nationen untereinander um die

Wahrung der eigenen Interessen ausgebrochen ist, sehen die Vereinigten Staaten offensichtlich tatenlos zu. Sie koennen aber nicht abseits stehen. Wenn Protektionismus nicht die Antwort ist,—das Uebersehen von Handelsmissbraeuchen ist es auch nicht.

Die USA koennen sich der Notwendigkeit zur wirtschaftlichen Staerkung der dritten und vierten Welt nicht verschliessen. Wohlwollen ist jedoch nicht mit Unvernunft gleichzusetzen. Nationen koennen sich nicht innerhalb weniger Jahre von einer primitiven Gesellschaft zu einem Industrieland entwickeln. Fuer einige Laender koennte eine Agrargesellschaft durchaus richtiger sein als ein technisiertes Leben. Ein Stahlwerk allein macht noch kein Land industriell unabhængig (der Autor erlaeuert seine These am Beispiel Pakistan).

Neue Mitspieler betreten die weltwirtschaftliche Buehne. Neue Gesichter erscheinen in der Tuer. Sie wollen nicht nur gesehen werden, sie wollen auch ihren Anteil. Das soll ihnen nicht verwehrt werden, aber sie muessen sich ihren Anteil auch verdienen—und dies nicht auf Kosten einer gesunden wirtschaftlichen Entwicklung in USA!

Die Herausforderung zu mehr Wettbewerbsfaehigkeit ist an die Vereinigten Staaten gestellt. Wenn sie ihr nicht gerecht werden, werden sie innerhalb kurzer Zeit ihren hohen Lebensstandard verlieren; das

Abrutschen geht wesentlich schneller als der Aufstieg.

Wenn der Wettbewerb in der Welt mit Augenmass gefuehrt wird, wenn die Industrien miteinander auf der Grundlage von "fair pricing" und "fair play" konkurrieren, koennen alle ihren Anteil am Wohlstand bekommen.

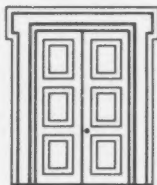
Die Loesung kann nicht darin bestehen, den Wohlstand der Welt einfach neu aufzuteilen, sondern nur darin, neuen Wohlstand zu schaffen, und zwar so, dass der Zuwachs des einen Landes nicht auf Kosten eines anderen Landes geht.

Es war das Wesen des "American dream," Reichtum nicht umzuverteilen, sondern neuen Reichtum zu schaffen. Wie konnte es soweit kommen, dass dieses Grundprinzip in Vergessenheit geriet?

Man kann die geaenderten wirtschaftlichen Bedingungen in der Welt nicht einfach uebersehen. Es ist durchaus moeglich, den Erwartungen und Anspruechen der Entwicklungslaender entgegenzukommen und gleichzeitig die Freundschaft zu den traditionellen Handelspartnern aufrechtzuerhalten—aber nur auf einer Basis gegenseitigen Respekts.

Stellen sich die Vereinigten Staaten diesen Problemen nicht, folgen sie nicht ihren legitimen Interessen und Anspruechen, so ist das nicht lobenswert, sondern ganz einfach selbstzerstoererisch.

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World Steel Dynamics

Comparative Circumstances
of Major Steel Mills
in the United States,
European Community
and Japan

Many major steel mills around the world are in a survival state because of years of inadequate profitability. For example, from 1975 to 1980, our data shows that 50 major international steelmakers lost \$2 billion in aggregate and increased debt by \$32 billion. Three major causes for this poor showing are:

1. *Steel demand* in the Western World today is about 3% less than it was in 1974. In the developed world, steel demand currently is about 355 million metric tonnes versus 385 million tonnes in 1974—a decline of 8%. In the developing world, demand today at about 92 million tonnes is down by 10% from 1979's peak figure of 102 million tonnes, although still up by 23% from 1974's 75 million tonnes.
2. *Inflation* has boosted the cost of capital equipment. The World Steel Dynamics' index of steelmakers' capital equipment costs currently stands at about 205 versus 100 in 1975 and 69 in 1972. This is one of the main reasons why capital spending per tonne produced on a constant dollar basis is down by about two-thirds since 1975.
3. *The world steel export price*—which impacts home country prices in many instances—has been extremely depressed since 1975. The price often drops to

roughly the level of variable costs, which are equal to 65-75% of average production costs. Prices remained suppressed for sustained periods because of the failure of marginal producers to be purged from the system due to governmental supports and protectionism. The world "spot" export price peaked in the prior steel shortage at \$411 per tonne in the second quarter of 1974 when the U.S. list price was \$254 per tonne. It currently stands at \$402 per tonne 2/3 of the U.S. list price of \$606 per tonne.

So far in 1982, we can think of three major developments in the world steel business, all of which are negative.

1. Steel demand seems to be slipping below 1981's already poor level, especially in the United States and the developing world. Hence, it now appears that Western World steel production in 1982 may drop by 4.3% to 440 million tonnes versus 460 million tonnes in 1981. (Note: We think that production during a possible steel shortage in 1985 could rise to about 550 million tonnes, with the shortage beginning at an annualized production level no higher than 520 million tons).
2. The situation for the U.S. mills has turned almost catastrophic. In the first



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quarter of 1982 they incurred EEC-type losses—about \$50 per tonne shipped before taxes—but they lack the EEC mills' access to governmental funds to tide them over the bad times. Much of the problem relates to the ultra-strong U.S. dollar, which is one of the causes of the 42% rise in imports in the first two months of 1982 compared to the 26% shipment decline for the U.S. mills.

3. The oil country tubular goods (OCTG) market, which has been the source of amazing profits for a number of mills, has collapsed. OCTG consumption in the United States in 1981 was about 5.0 million net tons versus deliveries of 7.2 million tons (including a 7.7 million ton annualized delivery rate in the second half of 1982). In 1982, assuming that consumption is flat and users liquidate 1.2 million tons of inventory, shipments will drop by 47% to 3.8 million tons.

Given this background, let's investigate the position of the major steel mills in the United States, EEC and Japan and see how they are adjusting. We'll look at 12 factors:

1. Foreign versus home-country steel shipments
2. Share of costs in the home currency
3. Share of costs that is fixed
4. Total employment cost per worker
5. Manhours per tonne shipped
6. Material costs per tonne shipped
7. Financial costs per tonne shipped
8. Pretax costs per tonne shipped
9. Pretax profits per tonne shipped
10. Liquid steelmaking costs
11. Capital outlays per tonne produced (deflated basis)
12. Financial structures

1. FOREIGN VERSUS HOME-COUNTRY SHIPMENTS

Shipments by Major Mills in Recent Years
(percent of total)

	U.S.A.	Japan	W. Germany	U.K.	France
HOME SALES					
Big Buyer	—	48	—	—	—
Dealer	—	21	—	—	—
Other	97	—	57	70	52
FOREIGN SALES					
Intra-EEC	—	—	17	13	24
Third countries	3	31	26	17	24
TOTAL	100%	100%	100%	100%	100%

- The U.S. mills are the least dependent on the world steel export market, which is good from the viewpoint that export prices usually are the most depressed. Conversely, prices in the U.S. market currently are much higher than those elsewhere which, when adding the size and easy access to the market, makes it highly coveted by foreign mills.

- The Japanese Big Buyer price is raised only occasionally—usually every year or two—and accounts for about 70% of domestic sales for the major mills. Importantly, it is not impacted by the world steel export price. On the negative side is the dependence of the Japanese mills on steel exports, and the requirement to receive informal approval by MITI (Ministry of International Trade and Industry) before any Big Buyer price hikes.

- The EEC seems to have the worst of both worlds—dependence on the world steel export market and a high level of intra-EEC sales (which tends to boost price competition in the home market). Surprisingly, the EEC mills have been successful since last fall in sharply reducing price cutting by strictly adhering to production quotas.

At today's exchange rates, the world steel export price is at \$402 per tonne, which compares to list prices of \$606 per tonne in the United States, \$436 in Japan, \$450 in West Germany, \$510 in the United Kingdom and \$447 in France.

Steelmakers' materials which are sold in dollar terms include iron ore, metallurgical coal, coke, steel scrap and fuel oil. Hence, for each 10% swing in the yen versus the U.S. dollar, Japanese relative costs are impacted by about 6.3%. Accordingly, the 33% weakening of the Japanese yen from 180 yen/dollar in the fall of 1978 to 240 yen/dollar at present has benefitted relative Japanese steelmaking costs by about 20%. (Note: The figures in this report are derived from the World Steel Dynamics' price/cost models for major steel mills in the major countries. We assume a U.S.A. 1977 commodity-grade carbon steel product mix for all periods. The WSD price/cost models include all benefits from any governmental aid, past or present. The models are constructed to mirror costs as they are viewed by steel company managements on a day-to-day basis. We track the price paid by steelmakers for key raw materials—whether or not the raw materials are provided on a bargain basis—and we pick up financial expenses and financial structures as they appear in the annual reports).

The U.S. mills have the lowest interest expenses per tonne shipped since their debt amounts to only 50% of equity versus 165% for EEC mills and 530% for the Japanese mills. Low operating rates sharply push up financial costs because they are the same no matter the level of the operating rate.

The combination of the strong dollar and relatively large wage increases for American steelworkers has put the U.S. wage well above the others. Steelworkers in most countries receive about the highest average wage of all industrial workers, which usually

makes wage costs a problem during periods of strong home currencies.

The sharp appreciation of the U.S. dollar since 1978 is indicated below:

Foreign Currency per Dollar

	Japanese Yen	W. German Mark	British Pound	French Franc
1978	210	2.01	0.521	4.51
1981	221	2.26	0.498	5.44
2nd Quarter 1982E	240	2.35	0.560	6.20

As indicated above, shifts in the operating rate have a significant impact upon productivity levels. In my opinion, the favorable level of U.S. labor productivity at low operating rates has been overlooked by many observers.

Positive factors for the respective producers include: (a) the U.S. mills have low costs on self-produced coal; (b) the Japanese use energy very efficiently; and (c) the West Germans and French have extremely low electric power costs. Negative factors include: (a) the price of iron ore pellets, F.O.B. the lower Great Lakes, is about one-third above the spot international ore price; (b) the Japanese pay very high prices for electricity; and (c) British Steel has been paying more for energy than its European competitors (although this is beginning to change.)

The U.S. mills have the lowest interest expenses per ton shipped since their debt amounts to only 50% of equity versus 165% for EEC mills and 530% for the Japanese mills. Low operating rates sharply push up financial costs because they are the same no matter the level of the operating rate.

The favorable 1978 cost position for the U.S. mills reflected a variety of factors including: (a) a weak dollar; (b) a higher-than-average operating rate; (c) a less rapid pass-through of higher energy prices; and (d) below-average gains in labor productivity through 1981. All in all, our analysis of historic relative cost movements (Graph 1) shows consecutive periods when costs are coming together and then flying apart. Hence, we believe that the U.S. mills are currently at the most adverse point of their international cost position, with relative results to look much better in several years due to the combination of a weaker dollar (especially versus the yen) and good strides in labor productivity. Also, the U.S. companies' integration into iron ore and coal is a big plus when the market is strong.

As indicated in Graph 2, the European mills incurred massive losses during the 1975-81 years due to the combination of weak demand and strong currencies. The Japanese and American performances were better and surprisingly similar. The Japanese

2. SHARE OF COSTS IN THE HOME COUNTRY

Major Mills' Dollar Versus Home Currency Costs

	U.S.A.	Japan	W. Germany	U.K.	France
In dollars	100%	37%	37%	26%	30%
In home currency	—	63	63	74	70

3. SHARE OF COSTS THAT ARE FIXED

Major Mills' Fixed Costs and Marginal Profit

	U.S.A.	Japan	W. Germany	U.K.	France
Fixed cost percentage	22%	36%	32%	35%	38%
1981 Marginal profit per tonne	\$156	\$203	\$138	\$89	\$120

4. EMPLOYMENT COST PER HOUR PER WORKER

Major Mills' Estimated Wage Costs Per Hour

	U.S.A.	Japan	W. Germany	U.K.	France	S. Korea
1978	\$16.39	\$9.73	\$13.55	\$6.68	\$12.91	\$1.37
Second quarter 1982E	23.00	10.75	13.25	9.00	13.00	2.60

5. MANHOURS PER TONNE SHIPPED

Major Mills' Manhours Per Tonne at Various O.R.s

	U.S.A.	Japan	W. Germany	U.K.	France
MH/T at 90% Operating Rate					
1978	8.9	8.4	9.7	19.2	12.4
Q2 82E	8.5	6.9	8.3	11.0	10.0
MH/T at Actual Operating Rate					
1978	9.0	10.5	12.9	23.8	13.9
Q2 82E	9.1	9.0	10.6	14.0	11.1
Actual Operating Rate					
1978	87%	64%	61%	71%	70%
Q2 82E	65	61	63	65	70

6. MATERIAL COSTS PER TONNE SHIPPED

Major Mills' Material Costs Per Metric Tonne Shipped

	U.S.A.	Japan	W. Germany	U.K.	France
1978	\$233	\$218	\$241	\$265	\$231
1981	330	291	275	388	286

7. FINANCIAL COSTS PER TONNE SHIPPED

Financial Expenses Per Tonne Shipped

	U.S.A.	Japan	W. Germany	U.K.	France
1978	\$32	\$100	\$57	\$62	\$77
1981	44	102	56	76	91

8. PRETAX COSTS PER TONNE SHIPPED

Major Mills' Pretax Costs Per Tonne Shipped

	U.S.A.	Japan	W. Germany	U.K.	France
1978	\$397	\$417	\$446	\$469	\$455
1981	562	502	476	622	522
Q2 82E	610	475	490	560	490

9. PRETAX PROFITS PER TONNE SHIPPED

Major Mills' Pretax Profits Per Tonne From Steel Operations

Estimates for Q2 1982

	U.S.A.	Japan	W. Germany	U.K.	France
Price realizations	\$580	\$450	\$440	\$460	\$440
Costs	610	475	490	560	490
Pretax profit	-30	-25	-50	-100	-50

* These figures exclude dividends and interest income, which is about \$10 per tonne in the United States, \$15 per tonne in Japan, \$18 in West Germany, \$1 in the U.K., and \$15 in France. Also, this data excludes the bulk of profits from the sale of OCTG. (Note: It costs approximately \$75 per tonne to deliver steel from a foreign country to the United States.)

10. LIQUID STEELMAKING COSTS

Liquid Steel Costs Per Tonne for Major and Midi-Mills

	U.S.A.	Japan	W. Germany	U.K.	France
			1978		
Major Mill	\$192*	\$170	\$178	\$187	\$178
Midi-Mill	169	198	176	178	171
			1980		
Major Mill	\$240*	\$194	\$216	\$243	\$229
Midi-Mill	217	245	224	230	228

* Raw materials assumed to be purchased at list price.

11. CAPITAL OUTLAYS PER TON (DEFLATED BASIS)

Capital Outlays Per Tonne in 1975 Dollars

	U.S.A.	Japan	E.E.C.
1972	\$10	\$24	\$37
1973	11	21	37
1974	15	29	23
1975	30	29	35
1976	26	37	25
1977	21	24	19
1978	15	24	16
1979	17	17	16
1980	19	16	18
1981	19	19	16
1982E	14	24	12

12. FINANCIAL STRUCTURE

Major Mills' Debt and Equity Positions (billions)

	U.S.A.	Japan	E.E.C.
		1972	
Debt	\$ 5.3	\$10.5	\$10.5
Equity	10.7	2.7	7.1
		1980	
Debt	\$ 8.5	\$25.0	\$24.3
Equity	16.4	4.7	14.8

are about to put through a 6% Big Buyer price increase. Hence, when including dividend and interest income and profits from the sale of OCTG, the Japanese appear to be about \$15 per ton (3600 yen/tonne) in the black.

Low scrap prices in recent years have given midi-mills an advantage in liquid steelmaking costs—which is the principal reason for the surge of electric furnace steelmaking capacity. The principal exception to this generalization is Japan, where relatively higher steel scrap prices and lofty prices for electricity give the major mills a cost advantage over their non-integrated brethren. (Note: There is a sharp split of product mixes in Japan between the major and non-integrated mills, with the latter concentrating on bar and construction type products. The non-integrated mills have turned in a substantial improvement in labor productivity in recent years. All the non-integrated mills but one—Tokyo Steel—are partly owned by the major mills and can be considered "satellites" of the major mills.)

As indicated, outlays in the United States and EEC are down by about 60% from the 1975 peak. Hence, it would appear that steelmaking capacity cannot be maintained. We expect that American effective steelmaking capacity in 1985 will drop to 125 million metric tonnes versus 130 million tonnes at present; with the EEC figure down from 160 to 148 million tonnes. Japanese capacity will remain flat at about 135 million tonnes. Japanese capital outlays in 1982 will rise by about one-third, with most of the funds spent on finishing facilities and upgrading of product quality.

While the U.S. financial structure is the best from the viewpoint of the debt to equity ratio, the U.S. mills currently have less access to capital than the Europeans and the Japanese. Many European mills receive substantial funds (both loans and equity) from governmental sources; while the Japanese mills currently have very adequate balance sheets by Japanese standards. (Note: Japanese banks traditionally make short-term loans available to the steelmakers when needed.)

CONCLUSIONS

The principal task for most major steelmakers is to survive these bad times in strong enough shape to fully participate in the better times which undoubtedly lie ahead. The best strategy for most Western World steelmakers is to cut costs, conserve cash flow, redeploy nonproductive assets, and convince governmental policymakers to provide protection from imports. Here are some other thoughts:

1. The steel business has become so difficult that it will be many years before Western steelmaking capacity can rise at even a 2% per annum pace. The problems are quite evident: unpredictable demand, governmental involvement, an ever more international and volatile pricing structure, tremendous capital requirements, and vulnerability to the vicissitudes of foreign exchange rate movements.
2. Steel industry conditions could remain quite difficult through 1983 since the longer-lead-time capital equipment and construction cycles are currently in the downward phase in most countries.
3. During the current period of severe steel oversupply, steelmakers in all countries become quite vulnerable if their currency is strong. The Japanese, for example, would be badly impacted by a very strong yen since they account for about 30% of the Western World steel export market.
4. The industry's profit level will likely be improved by the mid-1980s since reduced capacity and higher demand should permit fairly high operating rates.

DEUTSCHE ZUSAMMENFASSUNG

Vergleichende Betrachtung der wirtschaftlichen Bedingungen fuer Stahlunternehmen in den Vereinigten Staaten, der Europaeischen Wirtschaftsgemeinschaft und Japan

Nach kurzer Einfuehrung in den Themenbereich und Darstellung der Schwierigkeiten, die sich fuer den Stahlsektor aus der gesunkenen Nachfrage, der Inflation und den nachgebenden Exportpreisen ueber die vergangenen sechs bis acht Jahre hinweg ergeben haben, stellt der Autor die Stahlindustrien der genannten Regionen, nach zwolff Gesichtspunkten geordnet, einander zahlenmaessig gegenueber.

Ein Blick auf die jeweiligen statistischen Darstellungen erleichtert das Verstaendnis der entsprechenden Anmerkungen des Verfassers, der nach folgenden Gesichtspunkten ordnet:

1. Export/Inlandslieferungen
Hierzu verweist der Verfasser auf die geringere Abhaengigkeit der US-Unternehmen vom Weltexportmarkt fuer Stahl, auf dem die Preise am staerksten unter Druck sind. Er deutet die Schwerfaelligkeit des japanischen Preissystems an und zeigt sich

erstaunt, dass die Stahlunternehmen der EG seit letztem Herbst mit Hilfe von Produktionsquoten weitere Preisschnitte erfolgreich vermeiden konnten, obgleich sie von zwei Seiten unter Druck sind, von ihrer Abhaengigkeit von den Weltexportmaerkten fuer Stahl her und von dem hohen Anteil des Stahlhandels innerhalb der EWG, mit seinem scharfen Preiswettbewerb, her.

2. Dollarkurs und Produktionskosten
Der Autor spricht die Problematik an, die sich aus der Tatsache ergibt, dass wesentliche Vormaterialien der Stahlerzeugung in US-Dollar abgerechnet werden, wie Eisenerz, Kohle zur Stahlverarbeitung, Koks, Schrott und Heizoel in Dollar abgerechnet werden. Aenderungen im Austauschverhaeltnis zum Dollar koennen bei allen ausserhalb des amerikanischen Waehrungsbe-

Exhibit 1

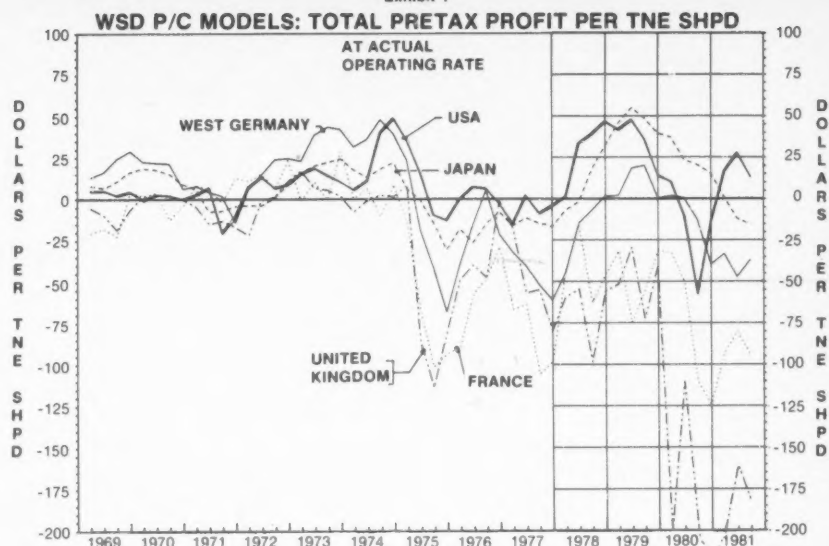
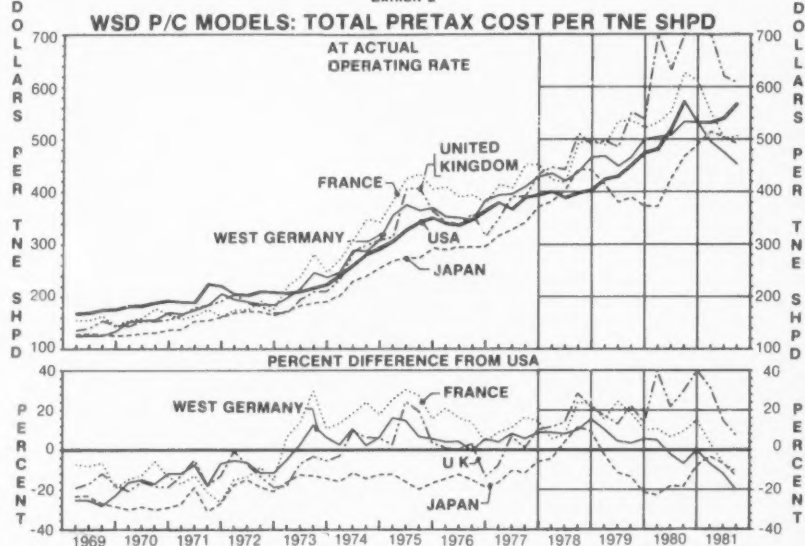


Exhibit 2



reiches produzierenden Stahlunternehmen stark variable Kostenfaktoren darstellen.

3. Anteil der Fixkosten

Die amerikanischen Stahlunternehmen haben nach dieser Darstellung geringere Fixkosten als ihre Konkurrenten. Sie haben mehr Bewegungsspielraum hinsichtlich Kuendigung und Einstellung von Arbeitskraeften und sie haben niedrigere Finanzierungsausgaben. So ergibt sich beispielsweise bei einem Absinken der Kapazitaetsauslastung von 90% auf 60% eine Kostenerhoehung bei den US-Unternehmen um 11%, bei den Japanern um 18% und den EG-Unternehmen um rd. 17%.

4. Bruttostundenloehne

Ein starker Dollar und verhaeltnismaessig grosse Lohnspruenge fuer den amerikanischen Stahlarbeiter haben das entsprechende Lohnniveau in den USA weit ueber die Vergleichszahlen in anderen Laendern wachsen lassen.

5. Mann-Stunden pro Liefertonne

In diesem Zusammenhang verweist der Verfasser auf die besonderen Auswirkungen der Kapazitaetsauslastung auf die Produktivitaet. Er meint, dass die guenstigen Werte, die sich fuer die US-Produktivitaet auch bei niedriger Kapazitaetsauslastung ergeben, bisher zu haeufig uebersehen wurden.

6. Materialkosten pro Liefertonne

Die Vorteile zu diesem Bereich werden wie folgt gesehen: (a) Die US-Stahlhersteller haben billige Kohle aus eigenen Bergwerken zur Verfuegung; (b) die Japaner wissen sehr sparsam mit Energie umzugehen; (c) die Deutschen und die Franzosen haben extrem niedrige Stromkosten. Nachteilig wirkt sich aus: (a) der Preis fuer Eisenerz-Pellets, f.o.b. Grosse Seen, liegt um etwa ein Drittel ueber dem internationalen Spot-Preis fuer Erz; (b) die Japaner zahlen sehr hohe Stromkosten; (c) British Steel hat mehr fuer Energie bezahlt als ihre europaeischen Wettbewerber.

7. Finanzierungskosten pro Liefertonne

Zu der entsprechenden Aufstellung merkt der Verfasser an, dass die amerikanischen Stahlunternehmen die niedrigsten Zinsaufwendungen pro Liefertonne haben, da ihr Debit nur 50% des Eigenkapitals betraegt gegenueber 165% bei EG-Unternehmen und 530% bei japanischen Stahlherstellern. Finanzierungskosten wirken sich in Zeiten schwacher Lieferungen besonders belastend aus, da sie unabhängig von der Kapazitaetsauslastung weiterlaufen.

8. Kosten vor Steuern pro Liefertonne

Zu den entsprechenden Zahlen erlaeuert der Verfasser, dass die guenstige Position der US-Unternehmen im Jahr 1978 auf eine Reihe von Faktoren zurueckzufuehren ist, wie auf den seinerzeit schwachen Dollar, die

ueberdurchschnittliche Kapazitaetsauslastung, ein langsames Durchschlagen der Energiepreiserhoehungen und unterdurchschnittliche Zuwachse der Arbeitsproduktivitaet bis 1981. Der Autor verweist auf die Grafik 1 zu diesem Artikel, die hier eine Analyse der Kostenbewegungen darstellt und die Abschnitte zeigt, in denen Kostenkurven zusammenkommen und wieder auseinanderlaufen. Er gibt seiner Ueberzeugung Ausdruck, dass die US-Unternehmen gegenwaertig am negativsten Punkt ihrer internationalen Kostensituation angekommen sind, und meint, dass die Situation in einigen Jahren dank einer Kombination von schwacherem Dollar (insbesondere gegenueber dem Yen) und guenstigen Entwicklungen im Bereich der Arbeitsproduktivitaet wieder wesentlich guenstiger aussehen wird. Er unterstreicht, dass die Integration von Eisenerz- und Kohleminen in die US-Unternehmen ein grosser Vorteil in Zeiten starker Nachfrage fuer die US-Unternehmen sein wird.

9. Gewinne vor Steuern pro Liefertonne

Hierzu verweist der Verfasser ergaenzend auf die Grafik 2, aus der sich ergibt, dass die europaeischen Unternehmen hohe Verluste waehrend der Jahre 1975 bis 1981 wegen des Aufeinandertreffens schwacher Nachfrage bei starken Waehrungen hinnehmen mussten. Die Japaner und Amerikaner hatten bessere und erstaunlich aehnliche Entwicklungen aufzuweisen.

10. Die Kosten fuer die Herstellung von Flussigstahl

Zu seinen entsprechenden Zahlenreihen merkt der Autor an, dass mittlere Stahlhersteller im Bereich Flussigstahl dank niedriger Schrottpreise kostenguenstiger produzieren konnten als grosse Unternehmen. Als Ausnahme wird auf Japan verwiesen, wo hohe Schrott- und Strompreise die Position der grossen Stahlhersteller beguenstigt.

11. Investitionsaufwand pro Tonne

Die Aufwendungen fuer Investitionen in der Stahlindustrie sind in den Vereinigten Staaten und im EG-Raum seit 1975 um 60% gesunken. Das ergibt sich aus der Tabelle. Der Verfasser schliesst daraus, dass sich damit die vorhandenen Kapazitaeten kaum halten lassen werden. Dementsprechend wird auch ein Absinken der amerikanischen Stahlherstellungskapazitaeten von heute 130 Millionen Tonnen auf 125 Millionen Tonnen im Jahr 1985 erwartet. Im gleichen Zeitraum sieht der Autor die EG-Stahlkapazitaeten von 160 auf 148 Millionen Tonnen sinken. Die vorhandenen japanischen Kapazitaeten duerften bei 135 Millionen Tonnen, die sie heute erreicht haben, stagnieren. Die Investitionen in Japan werden 1982 allerdings um etwa ein Drittel anwachsen, wobei der groessere Teil der Investitionen fuer die Verbesserung der

Produktqualitaet eingesetzt werden duerfte.

12. Finanzstruktur

Zu diesem Punkt wird dargestellt, dass die US-Stahlindustrie zwar die beste finanzielle Struktur aufweist, soweit das Verhaeltnis Schuldenstands Eigenkapital angesprochen ist, dass aber die europaeischen und japanischen Hersteller groesseren Zugang zu neuem Kapital haben als ihre amerikanischen Kollegen. Erwaechnung finden finanzielle Regierungshilfen, die europaeische Firmen in Anspruch nehmen koennen, waehrend die Japaner traditionell kurzfristige Kredite ihrer Banken in Anspruch nehmen koennen.

Der Verfasser schliesst mit der Bemerkung, dass es zur Zeit die Hauptaufgabe der grossen Stahlunternehmen ist, zu ueberleben, und nach Moeglichkeit die Substanz zu erhalten, damit eine Marktteilnahme in besseren Zeiten, die der Autor kommen sieht, voll gewährleistet ist. Die beste Strategie fuer westliche Stahlunternehmen sei die Senkung der Kosten, das Aufrechterhalten der Liquiditaet, die Aussonderung unproduktiven Anlagevermoegens und die Einflussnahme auf die Politiker mit dem Ziel der Einfuhrbeschaenkung. Darueber hinaus gibt der Autor dem Leser vier Gedankengaenge zur Stahlindustrie mit auf den Weg:

1. Das Stahlgeschaefte ist so schwierig geworden, dass eine Reihe von Jahren ins Land gehen werden, bevor die westliche Stahlproduktion mit einer bescheidenen Rate von 2% im Jahr wachsen kann. Die Probleme dabei sind evident: Unklarheit ueber den Bedarf, Einmischung von Regierungsseite, zunehmende internationale und wechselnde Preisstruktur, ueberaus hoher Kapitalbedarf und schliesslich Verwundbarkeit als Folge der schnellen Aenderungen der Wechselkurse der Waehrungen.

2. Die Situation der Stahlindustrien koennte das ganze Jahr 1983 hindurch schwierig bleiben, weil sich die laengerfristigen Zyklen fuer Investitionen und Anlagen momentan in nahezu allen Laendern in einer Negativphase befinden.

3. In der augenblicklichen Situation hoher Ueberangebote bei Stahl sind die Hersteller in all denjenigen Laendern schwer getroffen, deren Waehrungen einen steigenden Aussenwert aufweisen. Die Japaner zum Beispiel, die einen Anteil von 30% an den Stahlexportmaerkten der westlichen Welt besitzen, haetten Schwierigkeiten, wenn der Aussenwert des Yen ploetzlich steigen wuerde.

4. Die Gewinnsituation in der Stahlindustrie duerfte sich Mitte der achtziger Jahre verbessern, da verringerte Kapazitaeten und hoeherer Bedarf eine relativ hohe Kapazitaetsauslastung gewaehrleisten duerften.

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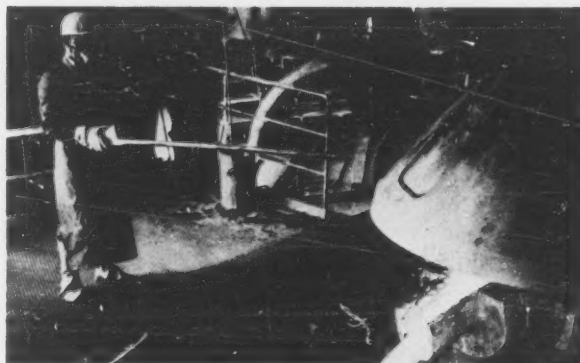


Preussag Aktiengesellschaft, headquartered in Hannover and Berlin, is a diversified company. Its metal, AMC-Group, transportation, energy and construction divisions sell raw materials, industrial products and services.

Preussag mines non-ferrous metal ores, manufactures lead, zinc and their alloys as well as other highly-refined metals, produces oil, gas and bituminous coal, leases railroad tank cars, operates inland waterway and ocean shipping as well as tank farms, drills wells and builds complete water supply facilities, constructs storage caverns, lays pipelines and is active in ocean technology and fire protection.

Through its acquisition of a majority of AMC, Preussag has expanded its business in non-ferrous metals internationally and obtained access to trading on the London Metal Exchange (LME). AMC's business ranges from international metal trading, zinc smelting and participation in non-ferrous metal companies to industrial activities.

Sales in 1981 totalled (excl. AMC-Group) DM 4.028 billion. The Preussag-Group employs about 17,000 people.

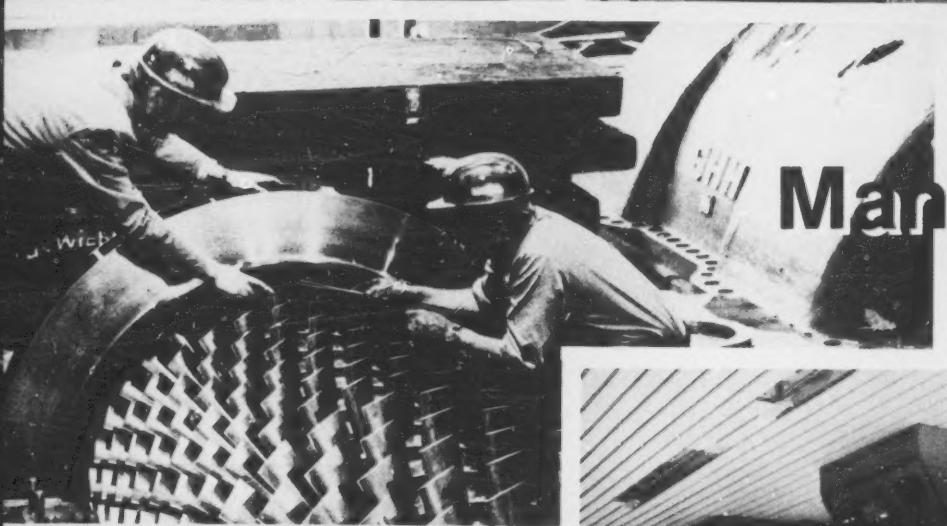
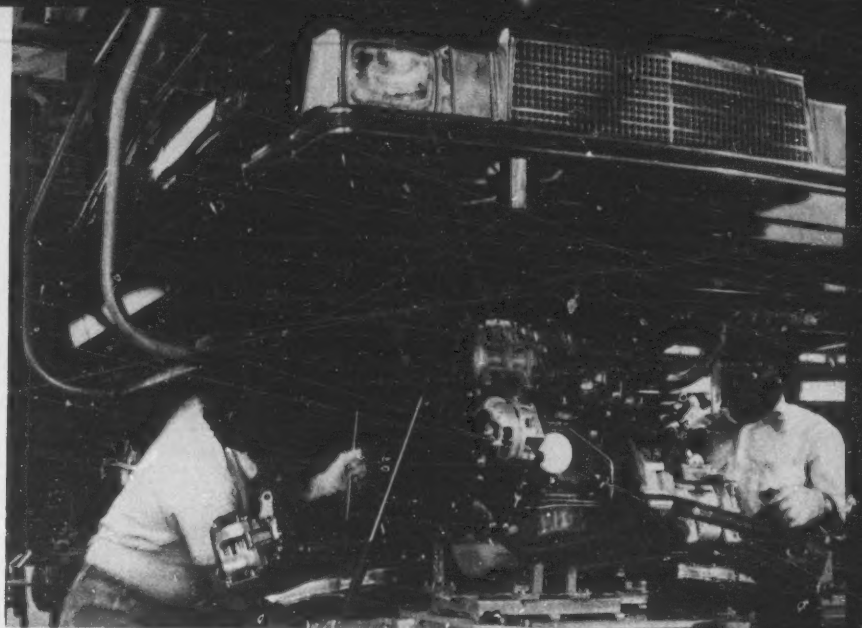
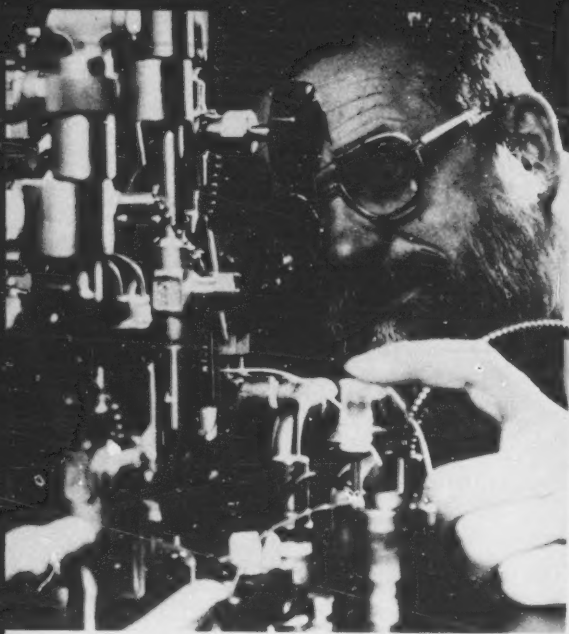


1 Tapping slag from a lead smelting furnace at Preussag-Boliden-Blei GmbH.

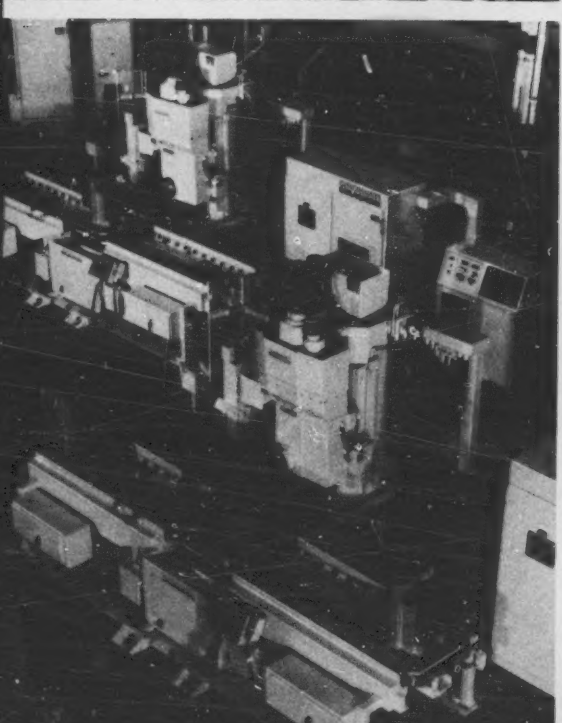
2 The 13,000 hp VTG supply boat "Schepelsturm", one of the most powerful in the world, cruising in the Antarctic.

3 Offshore drilling platform "Penrod 81" operating at the location Eversand 1 (Preussag's shareholding 33 1/3 %) in the river Weser estuary.

4 High pressure well development in North Yemen.



Manufacturing Sectors



The American Auto Industry's Economic Environment

Remarks by L.A. Iacocca, Chairman of the Board, Chrysler Corporation, at the Economic Club, Chicago, Illinois, October 21, 1982



by **L. A. Iacocca**
Chairman of the Board
Chrysler Corporation

After the Great Depression, America rebuilt the economy and in the process rebuilt the political system to cope with massive economic problems. When war caught us by surprise, we saved not only Europe but the whole world from tyranny.

For many Americans, the years following World War II were the golden era—the good old days. We were the pre-eminent political power in the world. Best of all, the world was at peace and America was prosperous. We were riding high and leading the way into the second half of the 20th Century. But something happened between the '50s and the beginning of the '70s.

My four years at Chrysler awakened me to the reality that America had become fat and lazy.

- Work practices had developed that short-changed productivity.
- The government had become our adversary instead of our partner.

We had a choice at Chrysler. We could hang it up and let the company go under, or we could try to save the company, and with it 600,000 jobs.

- Foreign countries that we defeated in war and rebuilt in peace began to beat us in our own markets.

And we let it happen. We sat on our laurels while America's lead slowly ebbed away.

When I came to Chrysler in 1979, all the sins of labor, all the sins of management, and

all the sins of a profligate government had pushed Chrysler right to the wall.

We had a choice at Chrysler. We could hang it up and let the company go under, or we could try to save the company, and with it 600,000 jobs.

It wasn't easy.

First, we cut our white-collar work force in half. Where we had 40,000 people working, we now have 21,000 producing a broader range of cars and trucks than ever before, and about an equal number.

Second, we closed or consolidated 20 obsolete and outmoded plants. We modernized the remaining plants to make them among the most efficient and productive in the industry.

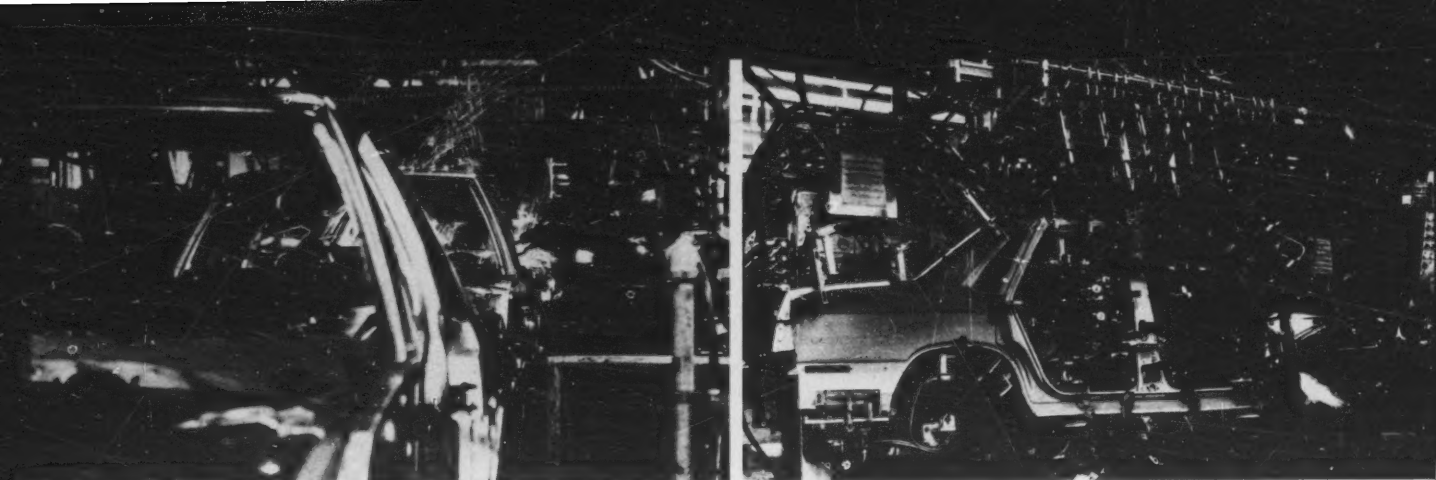
Third, both union and non-union workers made salary and benefit sacrifices that saved us \$1.2 billion.

Fourth, we reduced fixed costs by about \$2 billion a year.

Finally, we completed an arrangement to retire \$1.3 billion of U.S. bank debt.

The results of those dramatic steps are now a matter of record. As of today, we have no bank debt in the United States. We cut our break-even point to half the level of three years ago.

We have a solid 10 percent of the car market and 10 percent of the truck market right now. And we'll beat that by the end of the year with the strong 1983 line-up we introduced earlier this month. Our new E-body full-sized front-wheel-drive models *doubled* our share of the large car segment in



their first ten days on the market.

We've accumulated a lot of cash—the most we've had on hand in the history of the company. But we did that by selling off our tank business, cutting our inventories, and managing our receivables. Not a dime of that came from operating profit. That cash cushion is enough to pay bills for about three and a half weeks. And we need every bit of it to ride out this depression that doesn't seem to want to stop and to fund our future product program.

We reported a profit in the second quarter of 1982 of \$107 million. The first, second, and third quarters of 1982 were our first three consecutive back-to-back black quarters in five-and-a-half years. They only put our operating profit at break-even, which gives us a little breathing room for a change.

This is a strong record of accomplishment. And it shows in our cars. Our quality has improved a good third in the last 12 months. That's why we've been able to extend our historic 5-year, 50,000-mile warranty into 1983. And that's why our owner loyalty is on the upswing.

So, against all the odds, against the highest unemployment since the Depression, against the highest interest rates in over a hundred years, against a falling gross national product, against the lowest rate of new-car sales in a quarter of a century, we have delivered on our commitment to restore Chrysler as a strong competitor in the automotive marketplace. We have rebuilt the company and we are ready to go.

Unfortunately the economy is not!

The first, second, and third quarters of 1982 were our first three consecutive back-to-back black quarters in five-and-a-half years.

And it hasn't been since October 6, 1979—the day Paul Volcker decided to let the prime interest rate float. Interest rates, which hadn't been over 12 percent in a 100 years, shot up to over 20 percent. And the economy came to a grinding halt.

President Reagan tried to save the situation with tax cuts for business—and they will work someday. But as I've maintained for two years now, the Achilles' heel of that program was the fact that the use of our productive capacity was too low. Nobody is going to expand his plant when it's operating at only 48 percent, which it is for cars, or 68 percent of capacity, which it is for manufacturing. The fact is, capital spending plans by the nation's largest manufacturers fell by 22 percent in the second quarter of this year. The tax cut didn't stimulate a thing.

But what's worse, a whole new cult has been born out there—a cult devoted to making money on money. That greedy group puts their money into short term money markets or goes around gobbling up other companies.

In 1981 alone, U.S. companies spent \$82 billion eating each other up! Corporations that should know better—and have more concern for workers and consumers—are squandering valuable resources on corporate takeovers.

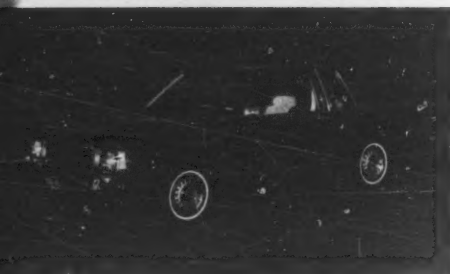
U.S. Steel used up \$3 billion of borrowing power and \$1.3 billion of their own cash to buy Marathon Oil. Why didn't they put that money into modern oxygen process plants where it's so desperately needed? That way they could compete with the Japanese—who are underselling them by 20 percent on the world market. They could fire up some of their tremendously under-utilized capacity and put their people back to work.

I buy American steel for my cars. And I have to pay the higher price, which squeezes my profits or gets passed on to the consumer. When U.S. Steel goes out and buys an oil company, we all feel like we've been had.

A lot of companies seem motivated by sheer greed. Dupont spent \$7.5 billion to take over Conoco. In the process, it tripled its debt to \$4 billion. Dupont is paying \$600

Both union and non-union workers made salary and benefit sacrifices that saved us \$1.2 billion.





million a year to service that debt. And *none* of that money produced one new job!

But the worst case is right in my backyard. Bendix, Allied, United Technologies, and Martin-Marietta borrowed \$5.6 billion to fund their corporate cannibalism. And they didn't create one new job in the process. It was a three-ring circus that ended when Allied provided a fourth ring. Again, no new jobs were produced!

But this merger madness is not the only reason that we continue to face a credit crunch. The Administration is salvaging Mexico, Brazil, and a few other countries through U.S. banks and the International Monetary Fund. Now, I don't want to be an isolationist, but that action is also taking billions from our credit markets—dollars we've got to recycle to keep our own economy going. Who's going to salvage *us*?

On top of that, the Administration can't get a handle on the debt. It's exploding. This fiscal year the debt broke \$100 billion for the first time in history. Now they tell us that in the 1984 fiscal year, it may hit \$175 billion. And they don't know what to do about it!

If they are using up over half of all the credit available now—54 percent to be exact—imagine what it's going to be like in the next two years. Somebody's going to really get crowded out. And I have a feeling it's going to be us again—the people in cars and houses.

The fight between the monetary purists and the supply-side ideologues is destroying the economy—it must be stopped one way or another. It's time we drove the high priests of ideology from the marketplace. Maybe you make the Fed more responsible to Congress. Or maybe you call a halt to mergers for a while. But something's got to be done to get the cost of money back to the levels consumers can afford.

We are on a downward spiral with each part of the economy pulling the others down.

The little consumer looks at the unemployment figures—the worst since 1934—and he's afraid he'll be the next to lose his job. The government tells us "only" 11.3 mil-

scaring another 19 million who think they may be next. That's 38 million people in this country frozen in their tracks. They're all on hold.

And the number is growing. Initial claims for unemployment insurance jumped to a record 703,000 in the latest report. That's 703,000 people who were laid off for the *first* time—in what are supposed to be the dying days of the recession. Nobody is going to put themselves into hock for a house or a car if they don't know how long they are going to be employed.

The little banker looks at the rate of bank failures—the worst in over 30 years—and he's afraid his bank may collapse. And the little depositor is afraid he'll lose the money he put into that bank. That's another whole group filled with fear and afraid to buy.

The small businessman looks at the volatility of the prime rate and knows he can't plan. The prevailing rate has changed 84 times since Volcker let the rate float. That's a change every 13.8 days! How can you plan anything with that kind of volatility?

Then there's the little businessman who looks at the bankruptcy rate and is afraid his company may go under next. More businesses have gone under than in any year since 1933!

Nineteen thousand businesses have gone under so far this year. That's 68 a day! And all those people and all their employees are lost to the marketplace. The Republicans, the Democrats, and the Fed have carried economic Darwinism to such an extreme that even the fittest can't survive!

There's a lot of fear out there because there's a lot of uncertainty out there—uncertainty about future interest rates, uncertainty about world currencies, and uncertainty about our economic policy.

That's why people are driving their cars until they fall apart; two-thirds of the cars purchased in 1970 are still being used! People are avoiding new purchases of any of the things that keep this economy going. Housing foreclosures are the highest they've been since records have been kept.

If that's not a depression, I don't know what is.

I have argued for the last 12 months that it was time for the government to take a leaf out of Chrysler's book. That it was time to cut costs and increase revenues just like we did. That it was time to put ideology aside and get practical. In short, that it was time to try something different.

As F.D.R. used to say: "The country needs, and demands, bold persistent experimentation. It is common sense to take a method and try it. If it fails, admit it frankly and try another. But above all, try some-

U.S. Steel used up \$3 billion of borrowing power and \$1.3 billion of their own cash to buy Marathon Oil. Why didn't they put that money into modern oxygen process plants?

lion people are out of work. But they don't mention the 2 million who have given up looking. And they don't tell us about the 6 million who have gone from full-time to part-time. That's 19 million people who are

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thing." In other words, don't just stand there! Do something!

In August, Congress passed, and the President signed, a bipartisan tax bill—a pragmatic tax bill—to raise revenues and begin to shrink the deficit. The stock market soared and interest rates came down. That turnaround should have told the gang in Washington that they were on the right track.

Now that interest rates are coming down, that bipartisan coalition must keep the momentum going. All it takes is a little common sense, a little political courage, and a little equality of sacrifice. And the job can be done not only to get our economy going, but to make us competitive in the world again. Here's what I've been proposing for the last 18 months:

First, why not cut five percent from the defense budget? The world will still be safe for democracy at 95 cents on the dollar. A five-percent cut would save \$15 billion. At \$300 billion a year, that's chicken-feed. Let's say that comes from the Administration's side.

Then you call the Democrats in and ask them to match it. Cut five percent from social programs—that's \$15 billion that comes out of their side.

Then comes the hard part. You work the revenue side. First, slap a surtax on imported oil to raise another \$15 billion a year.

And finally, add another fifteen cents to the tax on gas at the pump to prove we're serious about energy conservation—and you generate another \$15 billion a year.

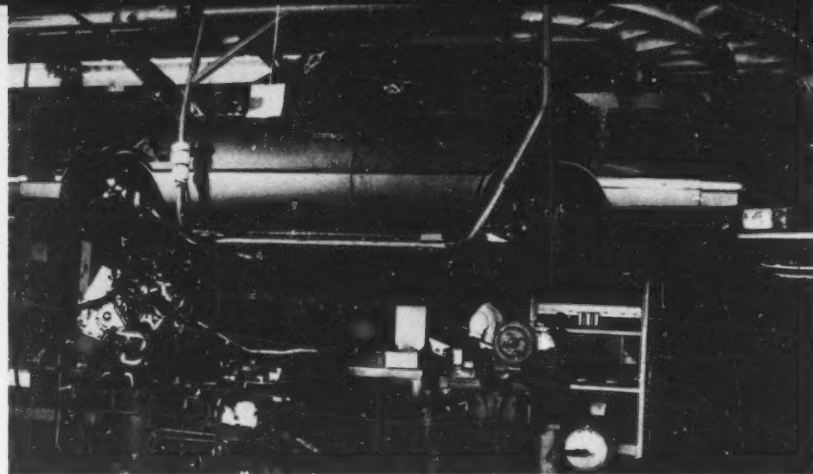
I know that proposal is controversial, but it makes sense. Our federal gas tax has been four cents a gallon since Eisenhower was in office over twenty-five years ago! In Canada, the tax is 87 cents. In Italy, it's over \$2. But raising the tax is politically unpopular in this country, so we sit here and let a realistic source of revenue flow away while we guzzle gas as if it were water.

These four steps would produce \$60 billion in new revenue and cut the deficit in half. The prime rate would drop another two to three points over-night and stabilize for a change. And we would begin to sell cars and houses, steel and lumber—the things that keep this country's economy going.

The beauty of this program is that it spreads the sacrifice equally among all of our people, among both political parties, among business and labor.

And there's another benefit. Lowered interest rates will force the speculators to quit playing their new game of making money on money.

If we dropped interest rates and we ended this merger madness, we could get the money



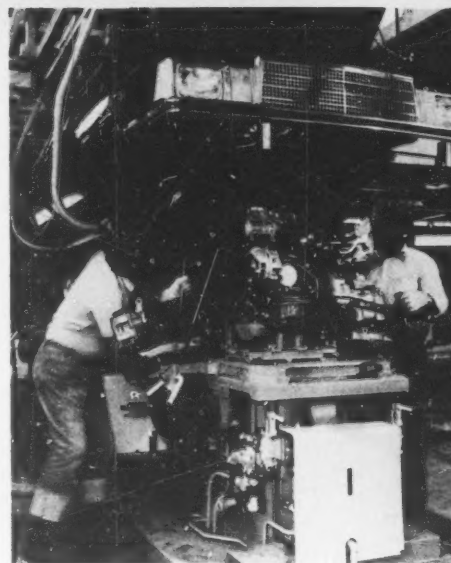
changers out of the temple of the national economy. We could get back to doing business the American way—by re-investing instead of buying one another up. And by creating more jobs so more people can take part in the growth of the economy and the country. People would begin to buy again. Capital would begin to form again. Plants would expand again. Welfare costs for local, state, and federal governments would come down.

But this program has advantages beyond bringing stability to the marketplace. It would keep us pointed in the direction of energy conservation and energy independence.

Energy is the keystone of our economic arch. But while we have consistently pledged ourselves to energy independence, we have consistently failed to develop a program to meet that pledge. The result has been policy-by-crisis. And once this recession-induced oil glut ends, we'll be back to another crisis. Remember that the \$1.25 gas you're presently enjoying is an aberration. It won't last long.

Reducing the deficit would be the immediate benefit of an energy tax. But in the future the new funds generated by the program I just outlined could be earmarked to attack the almost unbelievable problems eating away at this country today.

- Almost half the bridges in this country require major rehabilitation or reconstruction. It's going to take \$47 billion over the next decade just to make them safe.
- Water supply systems and sewers are rusting and rotting away all across the country. The price tag for repair—\$125 billion over the next decade.
- Nine thousand dams in this country have structural deficiencies that make them unsafe. The cost of rehabilitating them hasn't even been calculated.
- Highways are rutted with potholes from Florida to Alaska. Just to repair and maintain existing surfaces in rural areas, you need about \$900 billion.



I have argued for the last 12 months that it was time for the government to take a leaf out of Chrysler's book.



Bridges, dams and highways are falling apart in front of us while millions remain unemployed because this country refuses to generate revenue through energy taxes.

If we could set aside funds generated by a decent energy policy, we could put people to work again. We could give them hope and self respect again. We could revitalize our industrial base. And instead of dollars going into their welfare checks, dollars would be going into the rebuilding of America.

If this sounds like a Marshall Plan for America, it is. If we could rebuild Europe after World War II, we can rebuild America today.

Now, if our domestic problems are easy to solve with common sense, international problems can be solved with common sense—and *fairness*! Don't ever forget the world problems, because they have a large impact on how we do business in America.

Right now we face an imbalance of trade—in favor of the Japanese—of approximately \$15 billion a year on cars and trucks alone. That translates into a loss of a lot of jobs—maybe 600,000 to 700,000 jobs in this country. What's worse, those jobs are lost to a country that doesn't play fair when it comes to world trade. Let me give you a list of just a few of the little tricks they play on us.

Non-tariff and hidden barriers run the gamut from quotas on the importation of agricultural items to administrative procedures which restrict the sale of non-Japanese products.

The Japanese are not practicing free trade and they are not practicing fair trade. They are forcing America to fight with both hands tied behind its back.

They restrict the sale of citrus fruit and beef in their country—two of our biggest exports to Japan. They say they must do this to protect their farmers as a matter of national policy. Fine. If they can protect their agricultural base as a matter of national policy, why can't we protect our industrial base as a matter of national policy?

They restrict the sale of American pharmaceuticals.

They bar our telecommunication equipment and our fiber optics equipment.

They have created a web of 489 government-protected cartels that practice

two tiered pricing and closed bidding on contracts.

The Japanese government subsidizes Japanese companies by giving them low interest financing for products they export to this country, and by rebating commodity taxes on exports, which amount to \$650 a car. Probably worst of all, the government controls the yen to give Japanese companies an export advantage.

And their system of product re-classification is an absolute sham. Potato chips, for example, were initially classified as "processed food" carrying a 16 percent tariff. When a new importer threatened to make significant inroads into the Japanese market, its potato chips were suddenly re-designated as "confectionery," and a 35 percent duty was slapped on.

Cigarettes are yet another example. Up until 1981, American cigarette manufacturers selling cigarettes in Japan were not allowed to advertise in Japanese. Maybe to even the score, we ought to prevent Datsun and Toyota from advertising in English in America!

The Japanese are not practicing free trade and they are not practicing fair trade. They are forcing America to fight with both hands tied behind its back.

I've heard people say that lower Japanese prices are great for the American consumer. Maybe that's why, according to the August 4, 1982 *Washington Post*, 233 out of 493 White House staff own cars made in Japan. That kind of thinking is pretty near-sighted. And pretty costly to all of us.

On average, every time someone buys a Japanese car in this country, we lose \$1,750 in tax revenue at the local, state, and federal level. There's no free lunch. You've got to make it up someplace.

The Japanese are selling steel on the world market for 20 percent less than we do. They took 30 percent of our car market this summer.

Now they've entered the computer market, and I don't have to tell you what they'll do there—or what they have done lately.

They have just announced a major program to upgrade their aircraft industry and begin to sell commercial jets. And I don't have to tell you what they'll do there either!

What are we going to do when we need a steel industry, but don't have one? What are we going to do when we need an aircraft industry, but don't have one? When is this government going to wake up?

Some of these *buy American* programs aren't a matter of self-interest, they're matters of national defense and economic survival.

On a car built in the United States, \$850 in

taxes goes for defense. On a comparable car built in Japan, only \$80 goes for defense. That's a \$770 handicap that has to be made up. The least we could do is nail them for the difference. Maybe use the money to rebuild the Seventh Fleet and keep their sea lanes open. At least it would have a ring of justice to it.

A lot of us are committed to making "Made in America" mean something again because we have to compete with Japan on quality and productivity. But we can't stand by and just let them take our markets away. We can tell them to knock off the unfair practices or we'll be forced to retaliate—retaliate not only to stop their currency and trade manipulations, but to protect our industrial base, and the American way of doing business.

Americans seem to have forgotten that all the major advances in modern manufacturing technology were made in this country or in Europe. The Japanese just happen to copy well.

Remember that we did it first and we did it best when it came to building industrial might. The American way of doing business is to invest your profits where they will provide more jobs and develop better products.

The American way of doing business is to produce a quality product that the American worker can take pride in and that the consumer can rely on.

The American way of doing business is to show the rest of the world that "Made in America" means something again. I believe that way of doing business is coming back—not only at Chrysler but all across this country.

In economic terms, this may be America's darkest hour. But we at Chrysler, have proved that as slow and frustrating as it can be, our system still works and works well.

- If we got fat and lazy and let our quality slip, we can improve it until it is second-to-none in the world. Anything we did, we can undo!

- If we created a federal debt that's ruining our economy, we can reduce it to the point where the economy gets going again.

- If Japan cheats in the marketplace, we don't have to stand by. We can demand reciprocity.

The American people understand that. As a nation, we are a practical people who know how to get things done. We know how to roll up our sleeves and help each other solve our problems.

The Japanese are selling steel on the world market for 20 percent less than we do. They took 30 percent of our car market this summer.

einander aufzukaufen. Geld, das als Folge dieser Transaktionen fuer Zinsen aufgewendet werden muss, geht fuer die Beschaffung von Arbeitsplaetzen verloren. Die Interessen des Arbeiters und des Verbrauchers bleiben dabei auf der Strecke.

Die Fusionseuphorie ist aber nicht allein an der Kreditverknappung schuld. Die Regierung unterstuetzt durch US-Banken und den Internationalen Waehrungsfonds Laender wie Mexiko und Brasilien und entzieht dem amerikanischen Kreditmarkt so Milliarden. Ich bin kein Befuerworter von Inflationspolitik, aber wer unterstuetzt uns?

Ausserdem wird die Regierung nicht mit den Schulden fertig. In diesem Jahr wurde erstmals die \$100-Milliardengrenze durchbrochen, und jetzt hoeren wir, dass es 1984 \$175 Milliarden sein koennen. Wenn die Haelfte der verfuegbaren Kredite so verschluckt werden, kann man sich ausmalen, was in den naechsten beiden Jahren auf uns zukommt. Wie auch immer, die Zinsen muessen auf ein erschwierliches Niveau gebracht werden. Wir befinden uns auf einer Talfahrt, die alle Teile der Wirtschaft mitreisst.

Der Mann auf der Strasse bangt angesichts der Arbeitslosenzahlen um seine Stelle. Die Regierung beschwichtigt uns, es seien ja "nur" 11,3 Millionen Arbeitslose, unerwaehnt bleiben die 2 Millionen, die die Arbeitssuche aufgegeben haben, und die 6 Millionen, die von Vollzeit- zu Teilzeitbeschaeftigung wechseln. Kleine Banken muessen angesichts der Menge von Bankzusammenbruechen um ihre Existenz fuerchten. Der schwankende Leitzins macht dem kleinen Unternehmer die Planung unmoeglich. Dieses Jahr mussten im Durchschnitt 68 Firmen pro Tag Konkurs anmelden. Republikaner, Demokraten und Bundesbank haben den wirtschaftlichen Darwinismus so weit getrieben, dass selbst der Staerkste nicht ueberleben kann. Schon seit Monaten predige ich der Regierung, sie solle sich an Chrysler ein Beispiel nehmen und statt zu reden nunmehr handeln. Erste Schritte in Richtung Erhoehung des Staatseinkommens und Verringerung des Defizites brachten ueberaus positive Reaktionen der Boerse sowie Zinssenkungen. Daraus

DEUTSCHE ZUSAMMENFASSUNG

Nach der grossen Depression bauten die Amerikaner ihre Wirtschaft und gleichzeitig ihr politisches System wieder auf, um der massiven wirtschaftlichen Probleme Herr zu werden. Vom Krieg ueberrascht, retteten sie nicht nur Europa, sondern die ganze Welt vor der Tyrannei. Die Nachkriegsjahre brachten uns politische Vorherrschaft, Wohlstand und der Welt Frieden. Aber zwischen den funfziger und dem Anfang der siebziger Jahre kam die Wende. Amerika wurde behaebig und traege. Wir ruhten uns auf unseren Lorbeeren aus und sahen tatenlos zu, wie die Arbeitsmoral sank, die Regierung uns Steine in den Weg warf und Laender, die wir im Krieg besiegt hatten, uns auf unseren eigenen Maerkten ueberfluegelten. Bei Chrysler sah es nicht anders aus. Misswirtschaft und politische Fehlentscheidungen hatten Chrysler an den Rand des Ruins gebracht. Wir hatten die Wahl, den Dingen ihren Lauf zu lassen, oder aber den Versuch zu machen, das Unternehmen und mit ihm 600.000 Arbeitsplaetze zu retten.

Es war nicht einfach.

Durch Produktivitaetssteigerung, Rationalisierung, Lohnverzicht, Reduzierung der

Fixkosten und Ausarbeitung von Plaenen zur Schuldentilgung gelang uns das Unterfangen. Was die Finanzen und unseren Marktanteil angeht, stehen wir besser da als seit Jahren. Wir haben keine Bankschulden mehr und haben uns u.a. durch den Verkauf unserer Panzerproduktion Barmittel verschafft, die uns helfen werden, aus einer schier endlos scheinenden Depression herauszukommen. Zum ersten Mal seit 5 1/2 Jahren kamen wir 1982 in drei aufeinanderfolgenden Quartalen in die schwarzen Zahlen. Trotz aeusserst unguenstiger wirtschaftlicher Rahmenbedingungen hat Chrysler seine starke Wettbewerbsstellung auf dem Automobilmarkt zurueckerobert. Wir haben das Unternehmen wieder aufgebaut und sind fuer einen neuen Start geruestet. Die Wirtschaft ist aber noch nicht so weit. Und das seit dem 6. Oktober 1979, jenem "infamen Tag", an dem Paul Volcker den Leitzinssatz freigab. Die Zinsen, die seit einhundert Jahren 12% nicht ueberstiegen hatten, schnellten auf ueber 20% und legten die Wirtschaft lahm. Steuersenkungen fuer die Wirtschaft nuetzten nichts. Die Schwachstelle jenes Programmes war naemlich unsere geringe Kapazitaetsauslastung, niemand expandiert, wenn vorhandene Kapazitaeten nicht ausgelastet sind.

Schlimmer ist aber, dass heutzutage einem neuen Kult gefroent wird, mit Geld Geld zu verdienen. 1981 gaben amerikanische Firmen \$82 Milliarden aus, um



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haette man lernen muessen. Mit normalem Menschenverstand, ein wenig politischer Courage und Verteilung der Opfer koennen wir unsere Wirtschaft ankurbeln und auf dem Weltmarkt wieder konkurrenzfaehig werden. Mein Vorschlag geht dahin, den Verteidigungshaushalt um 5% zu kuerzen und so \$15 Milliarden einzusparen. Das waere der Regierungsbeitrag. Die Demokraten koenntn ihr Scherflein dazu beitragen, indem sie die Sozialprogramme um 5% streichen und so auch \$15 Milliarden beitragen. Durch Steuererhoehungen bei importiertem Oel und eine zusaetzliche Erhoehung der Benzinpreise sollten jeweils weitere \$15 Milliarden aufgebracht werden. Es koenntn so Mehreinnahmen in Hoehe von insgesamt \$60 Milliarden erzielt werden, die das Defizit halbieren und die Leitzinsen zur Abwechslung stabilisieren wuerden. Von den Fruechten dieser Massnahmen koenntn wir alle zehren, und sie bedeuteten einen Schritt in Richtung Einsparungen und Unabhaengigkeit im Energiebereich. Als Nebeneffekt koenntn wir den Konfusionskuenstlern das Handwerk legen. Mit den so erzielten Gewinnen koenntn einige der brennendsten Probleme der USA geloeset werden: Reparaturen oder Neubau von Bruecken, Wasserversorgungssystemen, Staudaemmen und Highways. Den Arbeitslosen wuerde geholfen werden, und wir

koenntn unsere Wirtschaft neu beleben. Auch die internationalen Probleme koennen mit normalem Menschenverstand und Fairness geloeset werden.

Gegenwaertig besteht im Automobilbereich zu Gunsten der Japaner ein Ungleichgewicht des Handels in Hoehe von fast \$15 Milliarden pro Jahr. Umgerechnet waeren das 600.000-700.000 Arbeitsplaetze in den USA. Schlimmer ist aber, dass die Japaner sich im Welthandel unfair verhalten. Die Skala der protektionistischen Massnahmen reicht von Einfuhrbeschaenkungen fuer landwirtschaftliche Produkte bis zur Beschaenkung des Verkaufes nichtjapanischer Produkte. Als Begrueundung werden nationale Interessen angegeben. Gut und schoen, aber warum sollten wir uns diese Begrueundung nicht zu eigen machen und unsere Industrie im nationalen Interesse schuetzen?

Mit Hilfe undurchsichtiger Kartelle, Regierungsunterstuetzung durch Steuererleichterungen fuer Exporte und staatlicher Kontrolle des Yen haben die Japaner einen Exportvorsprung erzielt. Als Einzelbeispiel mag die Zigarettenwerbung dienen. Bis 1981 durften amerikanische Hersteller fuer ihre Produkte in Japan nicht auf japanisch werben—vielleicht sollten wir im Gegenzug Datsun und Toyota in den USA englischsprachige Werbung untersagen. Das Argument, niedrigere japanische Preise seien

verbraucherfreundlich, zeugt von wirtschaftlicher Kurzsichtigkeit. Jedes in den USA verkaufte japanische Auto bedeutet Steuermindereinnahmen in Hoehe von \$1.750. Wenn wir uns von den Maerkten draengen lassen, werden wir eines Tages ohne die wichtigsten Industrien dastehen. Dieses "Buy American"-Programm ruehrt nicht aus Eigennutz, sondern ist im Interesse nationaler Verteidigung und wirtschaftlichen Ueberlebens dringend geboten, denn von jedem in den USA gebauten Automobil gehen \$850 an Steuern in die Verteidigung, in Japan nur \$80. Wir muessen "Made in America" wieder zu dem machen, was es war, und duerfen uns das Heft nicht ganz aus der Hand nehmen lassen. Die Amerikaner scheinen vergessen zu haben, dass wichtige moderne Produktionstechnologien im wesentlichen in den USA und in Europa entwickelt wurden und die Japaner nur gut im Nachahmen sind. Wirtschaftlich mag dies vielleicht Amerikas schwaerzeste Stunde sein, aber wir koennen es schaffen. Wenn wir Fehler gemacht haben, muessen wir sie korrigieren, und unsere Staatsschulden muessen wir abtragen. Wenn die Japaner auf dem Weltmarkt betruegen, brauchen wir nicht tatenlos zuzusehen.

Die Parole heisst: "Aermel aufkrempeln und zupacken."

German Auto Industry: Prognosis to 2000

• Under the title, "Driving with the Brakes On," we had predicted an immediately imminent slump in automobile business in the year 1979. A comparison shows that the actual development in the interim confirms this forecast:

Possible retroactive effects of the oil situation as well as the assumption at that time of a more severe recession have not yet been reflected in the development of the passenger car market.

• The effects of the oil situation on the reactions and behavioral patterns of car drivers have been all the more noticeable. As a result of changed driving habits and limited use, consumption of fuels decreased between 1979 and 1981 by approximately 150 liters per automobile. Technical improvements in cars were not significantly noticeable during this same period due to the extensive period of time needed for their introduction.

• The temporal separation of our passenger car forecasts into one intermediate-term, cyclically oriented investigative section and another long-term section (independent of the state of the economy as well as our methodical procedure) have worked very well. Accordingly the years 1981 to 1983 are methodically and temporally separated from the forecast through the year 2000.

• In the **intermediate term** the automobile business is on the verge of a renewed upswing. This will be noticeable from now on in the economic aspects of new registrations, but will not be reflected in the total number of new registrations until the spring of 1983.

• Like the entire economic situation, the market conditions for automobiles are now in a sensitive phase. Consequently it is possible that instead of an imminent upswing, an upswing delayed by approximately a quarter of a year may occur.

• For the **long term** the driving estimate is based on two alternative developmental perspectives. Along with an "imminent upswing" and renewed growth forces of a "structural change" in both the energy economy and in the economy as a whole, which in the main is occurring smoothly, we notice a "structural change" that takes place at the lower growth level in "delayed upswing" and longer-lasting, higher frictional losses.

• Demographic change is a decisive factor in the long-term development of motor vehicle use. The correction of corresponding official forecasts therefore should also have retroactive effects (upward) on our forecasts for automobile inventories. On the other hand,

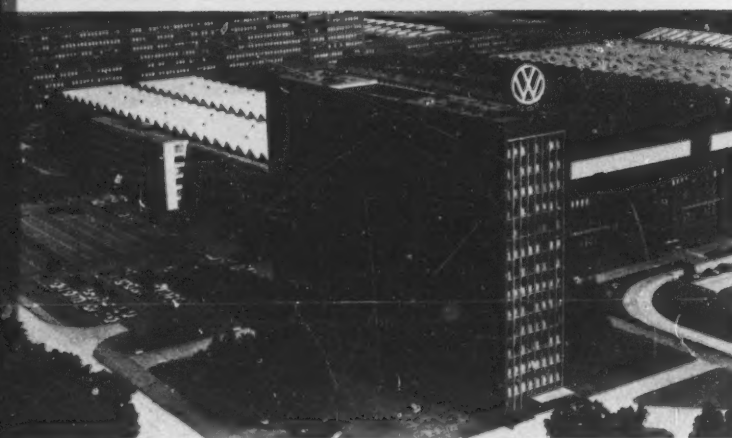
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Possible retroactive effects of the oil situation have not yet been reflected in the development of the passenger car market.

the methodical basis of the forecast (vehicle density) has proved stable.

• The final result, based on intermediate-term values, yields the following figures for the number of cars in use up to the year 2000:

• New registrations of cars would yield values that in "structural change" accompanying an imminent upswing would be 2.7-



The reactions by the public and by drivers are to be explained at least partially under the rubric of having exceeded a psychological threshold.

2.8 million greater than during the good years of 1978/79; or even in "structural change" accompanying "delayed upswing" in the 80s, these trend values would still be at the 1978/79 level, to be followed by a continual decline.

- Several striking changes are expected in fuel use and in the proportion of automobiles according to the kind of fuel used.
- Fuel use by non-commercial vehicles, which on the basis of present consumption values and behavioral patterns would reach approximately 30-32 million tons in the year 2000, will then actually be around 17-18 million tons due to various factors that reduce consumption.
- The diesel automobile could in the long term attain a share of approximately 30% of annual new registrations. Up to the year 2000, approximately 6 million diesel cars would be on the roads. In terms of the number of cars, that would correspond to a share of approximately 20%.
- The use of alternative fuels such as liquid gas and methanol will increase; on the other hand, alternative methods of propulsion might not attain any significant importance.

Developments Within Recent Years:

Profound economic changes that have also affected vehicle use have occurred dur-



ing the last two years since publication of our last automobile forecast. The following may be briefly noted:

- The drastic increases in crude oil prices by OPEC in 1979/80;
- The massive deterioration of the payments balances, caused in part by the OPEC increases;
- The rigorous high interest policy of the United States, which forced its own tight monetary policy on the central bank;
- Diminishing activity within the overall economy;
- The present stagnation of real income;
- Increasing unemployment;
- The extremely strained financial situation of the public budget, which leaves no latitude for an expansive fiscal policy.

These developments have led nationally and internationally on the one hand to a certain loss of trust in the German economy, as is also made clear by the changes in the exchange rate of the DM, particularly against the US dollar. On the other hand, however, stabilizing forces were thereby simultaneously liberated which, along with other processes of recovery occurring in various sectors of the economy, could lead to regaining economic strength:

- The noticeable improvement in international competitiveness of German industry resulting from the devaluation of the DM;
- The persisting readiness of business to invest;
- The policy of bargaining parties, which is more consciously responsible than that in other countries;
- The advantage in the stability of price levels which, in contrast to almost all other

countries, remains unchanged.

In addition, extremely large savings in oil by the consumer that can be observed in the Federal Republic and everywhere else, along with the high production levels maintained by Saudi Arabia, have led to a (transitory) surplus of crude oil. The resulting glut and the easing of petroleum prices likewise contribute at present to a further relaxation. At present, however, it is not yet possible to foresee clearly how far and mainly how quickly these tendencies will lead to a sustained improvement in the climate of the overall economy.

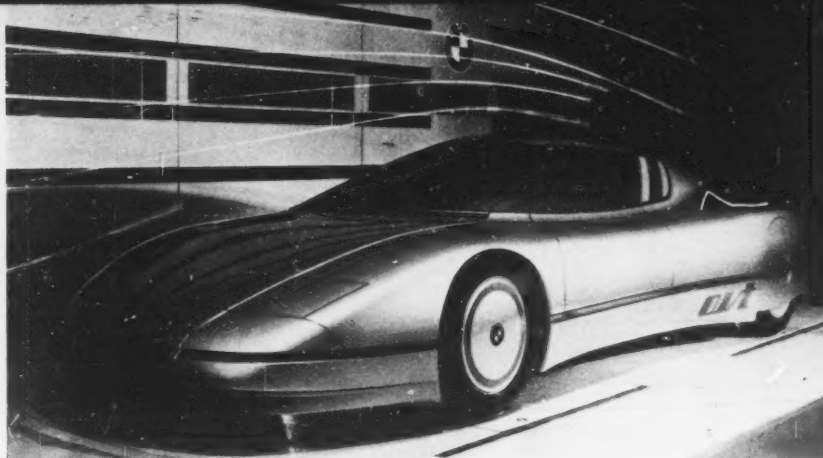
The German economy is therefore now in a critical phase in which it is particularly important that economic policy assist the emerging expansive forces to a breakthrough by diminishing the existing uncertainty through clear and unequivocal signals and by stimulating new trust.

Fuel Prices and Reactions of Automobile Drivers

Along with the generally deteriorated economic conditions, the automobile driver has had to bear significant special extra charges. Due to higher prices for fuel, insurance, repairs, service, and maintenance, the maintenance of private automobiles constantly became more expensive during the last ten years. The automobile share of spendable income, which also rose, nonetheless remained practically unchanged. Referred to this entire period of time, the share of fuel in maintenance costs rose only slightly—not even 0.3 percentage points. Gasoline price increases in recent years have therefore only slightly burdened the income of private households. Seen in this manner, the reactions by the public and by drivers are to be explained at least partially under the rubric of having exceeded a psychological threshold.

But if the financial burdens of the last 2-3 years are considered from another perspective, the picture looks different. With real income still increasing slightly, the average price for regular gasoline increased in Germany between 1978 and June 1981 by DM 0.52 to 1.41 per liter, i.e., by barely 60% (compare the official values of gasoline prices up to June 1981 shown in Illus. 2). During the same period of time, the price for diesel fuel rose approximately .4 DM, or by "only" 46%. The causes of these developments are familiar:

1. Drastic price increases by the oil-supplier countries in the years 1979-80 as well as the devaluation of the DM against the US dollar since the fall of 1980 led to a rise in crude oil costs by almost .38 DM per liter.
2. The imposition of the mineral oil tax,



along with the value-added tax still to be paid on top of that, resulting in a state-prescribed, extra charge on gasoline at the level of .08 DM per liter, while for reasons of energy policy the tax imposition on diesel fuel of only .03-.04 DM per liter worked out to slightly less. Since, however, additional value-added tax must also be collected on the price increases caused by the raised crude oil costs, the total fiscal burden, including petroleum stock tax, for regular gasoline rose after 1978 by .14 DM per liter, for diesel fuel by .09 DM per liter.

3. In contrast, the share of the mineral oil industry for regular gasoline of .17-.18 DM per liter remained practically constant in recent years. In 1981 it even dropped considerably. Out of this share must be paid the increased commissions to the gas station lessees, the expenses for processing and transport as well as the interest rate on the capital used, which increased explosively due to the hiked prices for oil supply during a period of general cost increases.

That the car driver would react to such high extra charges was surely to be expected, but the extent of these reactions was hardly predictable. Drivers reduced speed, avoided rapid acceleration, and adopted altogether more sensible driving habits. In addition, they more often left their cars at home, traveled by bicycle or public transportation, and dispensed with unnecessary excursions, thus decreasing mileage. In this manner, even during the years 1979 and 1980 they saved altogether an average of 50 liters of gasoline per car. This development even increased in 1981, with the result that for this year alone an additional saving of almost 100 liters is to be anticipated. By means of savings the automobile drivers were in fact able to limit the increase in their gasoline bills, but below the line the gasoline price increases of the last two calendar years brought them an extra expense of some 20%, which even under the assumption of no

The diesel automobile could in the long term attain a share of approximately 30% of annual registrations.



further price increases might rise to approximately 40% by year's end.

The conspicuous diesel boom of recent years also occurred from the desire to save on fuel costs: the low-consumption diesel car was able to more than double its share in new registrations from less than 5% in 1977 to more than 10% this year.



The list of reactions among automobile drivers triggered by the cost increases could easily be extended. Just briefly mentioned here are: the growing readiness to switch to smaller cars, the increasing popularity of the cheaper self-service stations as well as the decision to forego filling up with the more expensive super grades of gasoline if the vehicle is of the kind for which regular suffices.

However differently the individual may have reacted, the common goal of all automobile drivers was to save fuel and to reduce costs.

New Registrations and Total Number of Cars Registered

In recent years the public became more aware of the cyclical fluctuations in the demand for automobiles, expressed in the numbers of new registrations, than of the general increase in automobile use, which is measured by the total number of cars in the Federal Republic of Germany.

In the attempt to analyze this cyclical pattern in automobiles, already four years ago we had provided in our forecast the first pointer toward the possible cyclical tendencies in the development.

Based on these beginnings, with the aid of a detailed new method described at that time, a preview of the anticipated domestic demand for new registrations of cars was provided two years ago for the years 1979 to 1982.

This new method has proved very successful.

New Registrations 1980-1981

The forecast at that time was based on the available actual figures of new registrations up to and including May 1979. In contrast to

the preceding year, the growth rate of new registrations of cars was at that time +16.3% for the month of May, cumulatively +9.2% for the period of January to May. The upward trend in the market for automobiles was apparently unbroken. Our analysis led us, however, to entirely different conclusions that can be summarized from the publication of that time as follows:

- The cyclical factors contained in the number of new registrations would show that the peak had already been reached in the first quarter of 1979; the business outlook for automobiles was facing a profound downward swing. The absolute lowpoint during the fourth quarter of 1980 would show new registrations of only 0.48 million cars.
- The lowpoint would be reached in the third quarter of 1980 and would last until the first quarter of 1981.
- A genuine upswing would cyclically start only after the third quarter of 1981.
- Expressed in absolute numbers, new registrations during the next period would look as follows:

Remaining months of 1979:	1.35 million cars
The year 1980:	2.29 million cars
First quarter of 1981:	0.60 million cars

Forecast period up to the first quarter of 1981: 4.24 million cars

After exactly two years, a comparison with the actual development shows:

- The profound cyclical slump has actually occurred.

Juxtaposed to the predicted lowpoint of 0.48 million the new registrations of cars in the fourth quarter of 1980 is an actual lowpoint to date of 0.50 million cars in the fourth quarter of 1980.

- Excluding seasonal fluctuations, the development of the purely cyclical factors in new registrations is somewhat broader: with the additional actual data now available, the subsequent analysis shows that the cyclical highpoint was already reached in the year 1978 and the cyclical lowpoint precisely in the second half of the year 1981.

- In absolute numbers the actual new registrations looked as follows:

Remaining months of 1979:	1.28 million cars
The year 1980:	2.43 million cars
First quarter of 1981:	0.66 million cars

Actual number within the time period covered by the forecast: 4.37 million cars

The deviation of the forecast from the actual values only amounts to +0.13 million cars for two years.

In the short term, behavioral changes of the consumer led to more rational use and to a reduction in wasting energy.

Total Number of Cars Registered at Year's End

In addition to new registrations, the development of the total number of cars is determined by the number of cancellations of registered cars, the number of old registrations, i.e., renewals of cancelled registrations, as well as registrations of imported used cars.

The development of the total number of cars and the factors determining them are shown in Table 2.

In our last forecast we had predicted for the end of 1980 a total number of registered cars in the range of 23.1-23.3 million. The effective value amounted to 23.25 million cars. Therefore the development of motor vehicle use has proceeded altogether as expected despite changed general economic conditions and despite many drivers' efforts to economize, i.e., an interruption of the "innate self-regulation" in the development of automobile use due to behavioral changes did not occur. This topic, "innate self-regulation," will therefore be our starting point in the following investigation of the long-term trend of motorization.

The Long-Term Development up to the Year 2000

Starting from the cyclically determined intermediate-range developments in new registrations and the total number of registered automobiles, on the basis of the changes constantly occurring in the economy and society, quite varying perspectives for the development of automobile use are yielded for the long term. In our company these changes, along with the causative factors and general framework of conditions, are usually summarized into a so-called scenario. A scenario consequently provides a picture of possible future developments. At present we accord particular importance to our "structural change scenario." The basic ideas can be sketched as follows:

The second energy price shock of the years 1979-80 triggered a wave of economies in oil and energy. In the short term, behavioral changes of the consumer led to more rational use and to a reduction in wasting energy. For the intermediate and long term, specific energy consumption is further reduced by a variety of investment measures. A "structural change" in the economics of energy and in the overall economy is introduced which, on the basis of a changed behavioral model, high investments for restructuring, progressive production processes, and innovative products, leads to a longer-term improvement in economic strength. Such a restructuring process can occur at varying speeds and with more or with less frictional losses in



the transitional period. We therefore proceed from alternative courses: along with a structural change occurring with more enduring and higher frictional losses at a lower growth level.

Two alternative possible developments of automobile use up to the year 2000 will be shown in these differing framework conditions. For this purpose, the previously estimated intermediate-term courses help us in the projection of future development. We therefore call both long-term directions "structural change accompanying imminent upswing," or alternatively (severe) "structural change accompanying delayed upswing."

Population as a Determination Factor in Car Prospects

As discussed at length in previous publications,* our long-term forecast of the total number of registered cars is based on generalized logistical growth models. In this process the development of the total number of registered cars is estimated not directly but indirectly via car density.

Every household in Germany would have an automobile at its disposal by 1983. While now on the average only every second adult drives a car, in 1995 an average of every second citizen would own a car.

Car density is yielded as the quotient of the "total number of registered cars" and "population." For reasons of plausibility, our starting point is the degree of automobile use among the adult population capable of driving, i.e., persons of age 18 and over.

* Compare Shell Car Forecast 1977 and 1979

New developments in batteries are thus far not yet complete, but could yield a technological breakthrough within the next years.

Our assumptions concerning demographic changes are based on the projections by the Federal Office of Statistics.** The projected number of inhabitants would therefore have to be corrected in the direction of an increase of 0.8-1.0 million due to the large increase in the number of foreigners. It is conceivable that these figures, due to a changed estimate of population movements in the future, must be revised still further upward.*** Demographic change could hence become a conspicuous factor of uncertainty for the long-term course of motorization.

In contrast to our last forecast, noticeably higher population figures are now expected for the entire period of time covered by the forecast. The adult population will accordingly continue to increase to the end of the eighties, and in the year 2000 will comprise an additional 46.9 million persons, a figure that reflects 2.4 million more inhabitants than in the last forecast. This must, of course, also affect the future development of motorization.

Car Development in "Structural Change Accompanying Imminent Upswing"

The long-term direction of growth in motorization was estimated with the generalized function on the basis of effective total number of car registrations during the years 1952-1980 as well as with the intermediate-term forecast values of "imminent upswing." The computation yielded a theoretical saturation level of 678 cars per 1000 inhabitants, thereby confirming our last forecast (Evolution scenario) in which an estimated saturation level of car ownership at the level of 67% was yielded. Nonetheless, on the basis of the new demographic projection, basically there is an altogether more optimistic estimate of the long-term development of motorization.



The total number of registered automobiles would accordingly increase during the next ten years by more than 5 million, and in

the year 2000 approximately 30 million cars would be on our roads. That would correspond to a fulfillment of the estimated theoretical saturation level of some 94%, which is never attainable in actual practice.

According to statistics, every household in Germany would have an automobile at its disposal by 1983. And while now on the average only every second adult drives a car, in 1995 an average of every second citizen would own a car.

Development of Total Number of Registered Automobiles Accompanying Delayed Upswing

By including the intermediate-term forecast for the "delayed upswing," the estimate using the generalized logistical function yielded a saturation level of 613 cars per 1000 adults. It thereby corresponds to a large extent with our forecast computation (Dis-harmonies scenario). A slight increase in the saturation level would in any case have shown up simply because for this report we dispensed with the theory of a particularly deep cyclical slump that was projected in a previous report.

With a density of 593 cars per 1000 adults, the saturation level of almost 97% would be reached. Since there would consequently no longer be an expansive impulse generated by the degree of motorization, with a decrease in the population the number of registered cars would hardly increase in the nineties. It would have reached its highpoint in 1996 with 27.9 million. In contrast to the year 1980, it would then in fact still increase by some 4.6 million, but that is in comparison with the corresponding period of time in the past when the goal was to increase the total number of registered cars by more than 14 million, which is a more modest value.

The Development of New Registrations and Replacement Needs

The factors in the long-term demand for cars can be derived from the projected growth direction of the total number of registered cars.

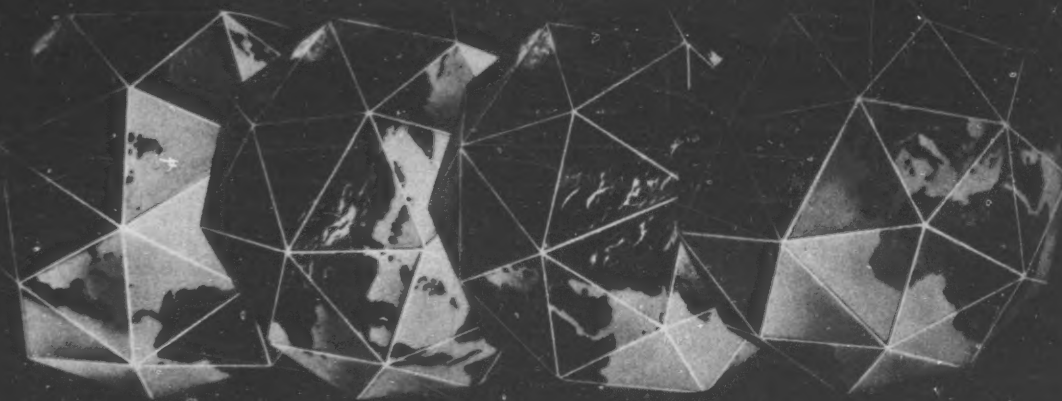
As in the intermediate-term forecast, for the computation of the replacement need median cancellation quotas were used for the division. The additional statistical residual of the cancellations needed for the determination of new registrations was roughly estimated and stabilized at a level of 50,000 vehicles.

In "structural change accompanying imminent upswing," annual new registrations in amounts of 2.7-2.8 million cars would be anticipated. For the entire period of time covered in the forecast they would thereby develop like a trend above the previous

** Compare Report Concerning Demographic Change in the Federal Republic of Germany, Bundesratsdrucksache 464/80 dated July 15, 1980

*** Also compare DIW: Simulationsrechnung zur Bevölkerungsentwicklung... Wochenbericht 24/81, p. 263 ff.

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record level of the years 1978-79. Parallel to this development, however, replacement need increases more rapidly, so the growth of the total number of registered cars decreases continuously. By the start of the nineties at the latest, it is therefore anticipated that there will be an interim reduction in the total number of registered cars due to cyclical fluctuations.

In "structural change accompanying delayed upswing" new registrations as high as during the years 1978-79 are to be expected in the trend direction up to the end of the eighties. Subsequently they will continually recede to approximately 2.4 million vehicles. Starting in the nineties, the number of new registrations is determined solely by replacement need. While a cyclically determined shrinkage in the total number of registered cars could already occur at the end of the eighties, a steady decrease is expected to start in the mid-nineties.

Prospect for Future Fuel Need

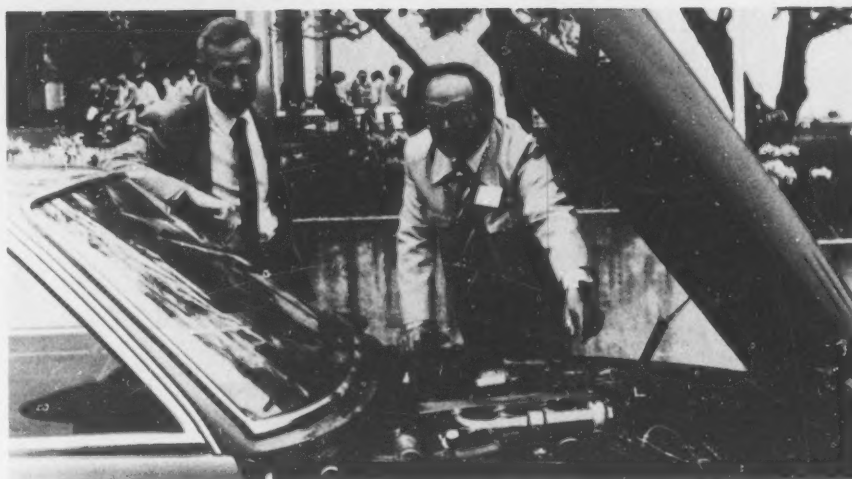
Against the background of events on the oil and energy markets, questions concerning fuel need and the fuels of the future are also increasingly posed along with the forecast of the long-term development of automobile use. Although these questions cannot be investigated in detail within the framework of this car forecast, several developmental perspectives can nonetheless be delineated topically under the presuppositions of "structural change."

The Cars of the Future Will Use Significantly Less Fuel

Triggered by the so-called energy crisis of 1973-74 and strengthened by the renewed oil price shock of the years 1979-80, a development in automobile construction was placed in motion that declared fuel consumption to be the main goal. Billions have been subsequently expended for the most various developmental directions:

- Increase in the degree of efficiency of the motor through optimization of the combustion chamber, compression, preparation of the mixture, and ignition;
- Introduction of exhaust turbo-loaders in connection with reduced cubic capacity;
- Improvement of the overall fuel distribution (motor-transmission management);
- Improvement of the aerodynamics;
- Reduction of weight by lightweight construction;
- Introduction of shifting and consumption indicators, start-stop equipment as well as economically equipped transmission gears.

Taken altogether, in our estimation these efforts lead to the fact that, in comparison



with 1980, the average fuel consumption of an Otto motor-propelled car will drop by about 25-35% by the year 2000.

The use of ethanol manufactured from biomass hardly has a chance of being realized. While the development of alternative fuels in some areas is already far advanced, the development of alternative methods of propulsion is only proceeding hesitantly.

The Share of Diesel Cars Will Continue To Increase

The share of the particularly economical diesel car in new registrations has constantly increased during the last ten years. This trend was even significantly strengthened during the last ten years by the expanded offering by the automotive industry as well as by the development in fuel prices. This trend will persist. We expect that the share of the diesel car among new registrations could reach approximately 30% in the long term. By the year 2000, the total number of registered diesel automobiles would conceivably reach 6 million, which would represent a five-fold increase of the present number.

The Use of Alternative Fuels Will Increase; Alternative Methods of Propulsion will Remain Unimportant

Research and efforts toward the development of alternative fuels and alternative methods of propulsion have intensified greatly in recent years. Moreover, based on the present status of vehicular technology, the alternative fuels—liquid gas, alcohol, methanol, and ethanol—can almost be characterized as convention. But to date their use was impeded by the tax law and insufficient availability. Since the tax laws in the Federal

Republic have to some extent already been changed and the availability of liquid gas and methanol will increase in the long term, both of these fuels increasingly will be distributed in the future. In contrast, simply from geographic-climatic reasons in Germany, the use of ethanol manufactured from biomass hardly has a chance of being realized. There is also no possibility in the foreseeable future for the use of hydrogen, since the technical problems connected with storage and making it available are far from being solved.

While the development of alternative fuels in some areas is already far advanced, the development of alternative methods of propulsion is only proceeding hesitantly. A very promising alternative that is also discussed more than any other is the electrically-powered car. Moreover the idea is by no means new, for there have been electrically-powered vehicles since around 1890. Because of the small energy storage capacity of their batteries, their disadvantages in regard to range, drive efficiency, and refueling are so great that they were not able to become popular. Recently there has been astonishing progress in the further development of battery technology. New developments in batteries (zinc/chlorine, zinc/nickel, nickel/iron, sodium/sulphur, and lithium/sulphur batteries) are thus far not yet complete, but could yield a technological breakthrough within the next years. Due to the necessary long phase of introduction, this could not yet be noticeably expressed for electrical propulsion during the time period covered by the forecast. The predominant kind of propulsion of the car up to the year 2000 will therefore remain the classical combustion motor.

The increasing total number of registered automobiles would in year 2000 produce an increase in consumption in the range of 5-7 million tons of fuel in comparison with today.

Fuel Consumption in Terms of Market Share Will Change Significantly

Because of the growing number of diesel cars and the ground gained by the new fuels, methanol and liquid gas (LPG), the share of the gasification fuel now in use will steadily shrink. The extent of dislocation in the shares of super and regular gasoline also depends upon various factors. At present existing price conditions and the available

vehicle structure, car drivers first forego filling up with super if regular suffices. For the long term, however, different fuel prices and price relations would lead to corresponding regroupings in the total number of registered vehicles. Since super gasoline, because of its resistance to knocking as a result of its higher compression and better energy use in the motor, promises the car driver savings advantages in comparison with regular gasoline, for the long term we expect a shift in favor of super despite the price difference. From considerations of energy economy, however, it is to be noted that an increasing share of super gasoline requires greater energy consumption by refineries.

Energy Consumption Will Steadily Recede in the Long Term

Triggered by the events on the oil markets, as mentioned earlier, developments were brought into play that were all directed toward a long-term irreversible reduction of fuel consumption. Car drivers also support these savings efforts. Even for the year now in progress a reduction of more than a million tons in fuel consumption by cars is expected. The cutback in consumption—dependent upon construction to a large extent—will increase if savings increasingly gain in importance.

In the present forecast we have predicted that by the year 2000 the total number of registered automobiles will have increased by 4.6-4.7 million in comparison with the figure for 1980. On the basis of improved vehicular technology, changed structural composition (cubic capacity, method of propulsion, etc.), declining mileage, and rational driving habits, we accordingly expect a decline in fuel need for cars in the range of 7-8 million tons (referred to the energy content of gasoline). That would correspond today to a reduction of approximately 30% in consumption of fuels despite a simultaneous growth rate of 20-30% in the total number of registered automobiles. To express it differently, with unchanged validity of the present technical and behavioral presuppositions, the increasing total number of registered automobiles would in year 2000 produce an increase in consumption in the range of 5-7 million tons in comparison with today. Taken together, the calculated increase in consumption and the expected reduction in consumption yield probable fuel savings of approximately 13-14 million tons up to the year 2000.

Against the background of these expectations, the question concerning the security of the future energy supply should lose much of its importance. ■



DEUTSCHE ZUSAMMENFASSUNG

In den vergangenen Jahren haben sich einschneidende wirtschaftliche Veränderungen ergeben, die auch auf die Motorisierung in der Bundesrepublik ausstrahlend haben:

- Die in 1979/80 erfolgten drastischen Rohölpreiserhöhungen der OPEC;
- die dadurch mitverursachte massive Verschlechterung der deutschen Leistungsbilanz;
- die rigorose Lochzinspolitik der USA, die eine eigene, restriktive Geldpolitik der Bundesrepublik erzwingt;
- nachlassende gesamtwirtschaftliche Aktivitäten;
- nunmehr stagnierende Realeinkommen;
- wachsende Arbeitslosigkeit;
- die ueberaus angespannte Finanzlage der oeffentlichen Haushalte, die keinen Spielraum fuer eine expansive Fiskalpolitik laesst.

Diese Entwicklungen haben national und international einerseits zwar zu einem gewissen Vertrauensschwund gegenueber der deutschen Wirtschaft gefuehrt, wie auch die Kursentwicklung der DM, insbesondere zum US-Dollar, deutlich macht. Doch andererseits wurden damit gleichzeitig stabilisierende Kraefte freigesetzt, die gemeinsam mit anderen, sich in verschiedenen Teilbereichen der Wirtschaft abzeichnenden Genesungsprozessen zu einer Wiedergewinnung der Wirtschaftskraft fuehren koennen:

- Die aufgrund der DM-Abwertung spuerbare Verbesserung der internationalen Wettbewerbsfaehigkeit der deutschen Industrie;
- die im Vergleich zu anderen Laendern verantwortungsbewusstere Politik der Tarifparteien; sowie
- der gegenueber fast allen anderen Laendern unveraendert bestehende Vorsprung in der Stabilitaet des Preisniveaus.

Darueber hinaus ist es, unter anderem wegen der sowohl in der Bundesrepublik als auch weltweit zu beobachtenden, ausserordentlich grossen Oeleanparungen, zu einem (voruebergehenden) Ueberangebot an Rohoel gekommen. Der dadurch entstandene Mengendruck und das Nachgeben der Rohoelpreise tragen gegenwaertig gleichfalls zu einer weiteren Entspannung bei. Es ist jedoch zur Zeit noch nicht eindeutig abzusehen, inwieweit und vor allem wie schnell sich aus diesen Tendenzen eine nachhaltige Verbesserung des gesamtwirtschaftlichen Klimas entwickeln wird.

Die deutsche Wirtschaft befindet sich somit gegenwaertig in einer kritischen Phase, in der es besonders von seiten der Wirtschaftspolitik darauf ankommt, den sich abzeichnenden, expansiven Kraeften zum Durchbruch zu verhelfen, indem durch klare und eindeutige Signale die bestehende Verunsicherung abgebaut und ein neues Vertrauen geweckt wird.

Nach den allgemein verschlechterten wirtschaftlichen Rahmenbedingungen musste der Autofahrer in den letzten Jahren erhebliche spezielle Mehrbelastungen tragen. Die PKW-Haltung wurde wegen hoeherer Preise fuer Kraftstoffe, Versicherung, Reparatur, Wartung und Pflege waehrend der vergangenen 10 Jahre, absolut gesehen, staendig teurer, jedoch blieb ihr Anteil am gleichfalls gestiegenen, ausgabefaeihigen Einkommen praktisch unveraendert. Bezogen auf diesen Gesamtzeitraum erhoelte sich der Anteil der Kraftstoffe an den Haltungskosten nur unwesentlich. Die Benzinpreiserhoeihungen der letzten Jahre haben das Einkommen der privaten Haushalte nur geringfuegig mehr belastet. So gesehen, sind die Reaktionen von Oeffentlichkeit und Autofahrern nicht unter dem Gesichtspunkt des Ueberschreitens einer psychologischen Reizschwelle zu erklaren.

Werden jedoch unter einer anderen Perspektive lediglich die finanziellen Belastungen der letzten 2-3 Jahre betrachtet, so sieht das Bild schon anders aus. Bei real kaum noch wachsendem Einkommen stieg der durchschnittliche Preis fuer Normalbenzin zwischen 1978 und Juni 1981 um DM 0,52 auf DM 1,41 pro Liter—also um knapp 60 Prozent.

Dass der Autofahrer auf derart hohe Mehrbelastungen reagieren wuerde, war zwar zu erwarten, doch war das Ausmass dieser Reaktionen kaum vorhersehbar. Die Autofahrer drosselten das Tempo, vermieden scharfes Beschleunigen und achteten auf eine insgesamt rationellere Fahrweise. Darueber hinaus liessen sie immer oeffter ihr Auto zu Hause stehen, fuhren mit dem Fahrrad oder oeffentlichen Verkehrsmitteln und unterliessen verzichtbare Ausflugsfahrten, so dass auch die Fahrleistungen sanken. Zusammengekommen sparten sie auf diese Weise in den Jahren 1979 und 1980 durchschnittlich bereits 50 Liter Benzin je PKW ein. Die Entwicklung hat sich in 1981 noch verstaerkt, so dass allein fuer dieses Jahr mit einer zusaetzlichen Einsparung von knapp 100 Litern zu rechnen ist. Durch die Einsparungen konnten die Autofahrer den Anstieg ihrer Benzinrechnung zwar begrenzen, doch unter dem Strich brachten ihnen die Benzinpreiserhoeihungen der letzten Kalenderjahre eine Mehrbelastung, die ueber 40 Prozent ausmachen duerfte.

Die Liste der durch die Kostensteige-

rungen ausgelosten Reaktionen der Autofahrer liesse sich leicht noch veraengern. Stichwortartig sei hier nur angefuehrt: die wachsende Bereitschaft zum Umsteigen auf kleinere PKW, die zunehmende Beliebtheit der preiswerteren Selbstbedienungssstationen sowie der Verzicht auf das Tanken von hoeherwertigem Superbenzin bei Fahrzeugen, fuer die Normalqualitaet ausreicht.

So verschieden auch der einzelne reagiert haben mag, gemeinsames Ziel aller Autofahrer war es, Kraftstoff einzusparen und Kosten zu senken.

Der PKW-Bestand zu Ende 1980 betrug 23,25 Mio. PKW. Die Motorisierungsentwicklung ist trotz veraenderter wirtschaftlicher Rahmenbedingungen und trotz der vielen Einsparbemuehungen der Autofahrer insgesamt erwartungsgemaess verlaufen. Eine Unterbrechung der "Eigengesetzlichkeit" der Motorisierungsentwicklung aufgrund von Verhaltensaenderungen fand nicht statt. Fuer die folgende Untersuchung des langfristigen Trends der Motorisierung wird von dieser "These der Eigengesetzlichkeit" ausgegangen.

Der zweite Energiepreisschock der Jahre 79/80 loeste eine Welle von Oel- und Energieeinsparungen aus. Kurzfristig fuehren Verhaltensaenderungen der Verbraucher zu einem rationelleren Einsatz und zu einem Abbau der Verschwendung von Energie. Mittel- und langfristig wird durch eine Vielzahl investiver Massnahmen der spezifische Energieverbrauch weiter gesenkt. Es wird ein energie- und gesamtwirtschaftlicher "Strukturwandel" eingeleitet, der auf Basis veraenderter Verhaltensmuster, hoher Investitionen zur Umstrukturierung, fortschrittlicher Produktionsprozesse und innovativer Produkte zu einer langfristigen Staerkung der Wirtschaftskraft fuehrt. Ein solcher Umstrukturierungsprozess kann sich unterschiedlich schnell und mit mehr oder weniger Reibungsverlusten in der Uebergangszeit vollziehen. Die vorliegende Analyse geht deshalb von alternativen Verlaeuften aus: Neben einem bei erneuerten Wachstumskraeften weitgehend reibungslos verlaufenden Strukturwandel wird auch ein (harter) Strukturwandel betrachtet, der sich bei laenger anhaltenden und hoeheren Reibungsverlusten auf einem niedrigeren Wachstumsniveau vollzieht.

Eingebettet in diese unterschiedlichen Rahmenbedingungen werden zwei alternative Entwicklungsperspektiven der Motorisierung bis zum Jahr 2000 aufgezeigt. Die beiden langfristigen Entwicklungslinien werden mit "Strukturwandel bei baldigem Aufschwung" bzw. mit (hartem) "Strukturwandel bei verzoegertem Aufschwung" bezeichnet.

Der PKW-Bestand wuerde bei der Entwicklungslinie "Strukturwandel bei

baldigem Aufschwung" in den naechsten zehn Jahren um ueber 5 Mio. PKW zunehmen, und im Jahre 2000 wuerden rund 30 Mio. PKW auf unseren Strassen rollen. Das entspraecht einer Ausschloepfung des geschaetzten, in der Praxis aber nie zu erreichenden theoretischen Saettigungsniveaus von gut 94 Prozent.

Bereits 1983 wuerde statistisch gesehen jeder Haushalt in Deutschland ueber ein Auto verfuegen. Und waehrend heute im Mittel erst jeder zweite Erwachsene einen PKW faehrt, wuerde 1995 durchschnittlich schon jeder zweite Bundesbuerger ein Auto besitzen.

Tritt ein "Strukturwandel bei verzoegertem Aufschwung" ein, so wuerde mit einer Dichte von 593 PKW je 1000 Erwachsene im Jahr 2000 das Saettigungsniveau zu fast 97 Prozent erreicht sein. Da vom Motorisierungsgrad keine expansiven Impulse mehr ausgehen koennten, wuerde bei ruecklaeufiger Bevoelkerung der PKW-Bestand in den neunziger Jahren kaum noch zunehmen und mit 27,9 Mio. Fahrzeugen im Jahr 1996 seinen Hoehepunkt erreicht haben. Gegenueber dem Jahr 1980 wuerde er dann zwar noch um gut 4,6 Mio. Pkw zugenommen haben, doch ist das im Vergleich zum entsprechenden Vergangenheitszeitraum, in dem ein Bestandswachstum von ueber 14 Mio. Fahrzeugen erzielt worden war, ein eher bescheidener Wert.

Aus dem prognostizierten Wachstumsverlauf des PKW-Bestands lassen sich die Komponenten der langfristigen Automobilnachfrage ableiten.

Im "Strukturwandel bei baldigem Aufschwung" wuerden jaehrliche Neuzulassungen in Hoehe von 2,7-2,8 Mio. PKW zu erwarten sein. Sie wuerden damit waehrend des gesamten Prognosezeitraums trendmaessig ueber dem bisherigen Rekordniveau der Jahre 1978/79 verlaufen. Parallel zu dieser Entwicklung nimmt jedoch der Ersatzbedarf noch schneller zu, so dass das Wachstum des PKW-Bestands kontinuierlich abnimmt. Spaetestens ab Beginn der neunziger Jahre ist deshalb damit zu rechnen, dass es aufgrund konjunktureller Schwankungen zu einem zwischenzeitlichen Rueckgang des PKW-Bestands kommt.

Im "Strukturwandel bei verzoegertem Aufschwung" sind im Trendverlauf aehnlich hohe Zulassungen wie in den Jahren 1978/79 nur noch bis Ende der achtziger Jahre zu erwarten. Sie gehen anschliessend kontinuierlich bis auf etwa 2,4 Mio. Fahrzeuge zurueck. Die Entwicklung der Neuzulassungen wird ab Beginn der neunziger Jahre nur noch vom Ersatzbedarf getragen. Waehrend konjunkturell bedingt bereits Ende der achtziger Jahre ein Schrumpfen des PKW-Bestands aufzutreten koennte, ist ab Mitte der neunziger Jahre

mit einem anhaltenden Bestandsabbau zu rechnen.

Vor dem Hintergrund der Geschehnisse auf den Oel- und Energiemaerkten stellen sich mit der Prognose der langfristigen Motorisierungsentwicklung in zunehmendem Masse auch die Fragen nach dem Kraftstoffbedarf und den Kraftstoffen der Zukunft. Diesen Fragen kann im Rahmen der PKW-Prognose zwar nicht ausfuehrlich nachgegangen werden, doch lassen sich thesenartig einige Entwicklungsperspektiven unter den Voraussetzungen des "Strukturwandels" aufzeigen.

Ausgelost durch die sogenannte Energiekrise von 1973/74 und verstaerkt durch den erneuten Oelpreisschock der Jahre 1979/80 ist eine Entwicklung im Automobilbau in Gang gesetzt worden, die die Kraftstoffeinsparung zum wesentlichen Ziel erklart hat. Milliardenbeträge werden seitdem fuer die verschiedensten Entwicklungslinien aufgewandt:

- Erhoehung des Motorwirkungsgrades durch Optimierung von Brennraum, Verdichtung, Gemischauflbereitung und Zuendung;
- Einfuehrung von Abgas-Turboladern in Verbindung mit verringerten Hubraeumen;
- Verbesserung der gesamten Kraftuebertragung (Motor-/Getriebemanagement);
- Verbesserung der Aerodynamik;
- Absenkung des Rollwiderstandes;
- Reduzierung des Gewichts durch Leichtbauweise;
- Einfuehrung von Schalt- und Verbrauchsanzeigen, Start-/Stopeinrichtungen sowie sparsam ausgelegten Getriebeuebersetzungen.

Zusammengenommen werden diese Anstrengungen nach Analyse der Firma Deutsche Shell dazu fuehren, dass der durchschnittliche Kraftstoffverbrauch eines durch Otto-Motor angetriebenen PKW in der Bundesrepublik gegenueber 1980 um ca. 24-35 Prozent von 10,7 auf 7,8 l/100km im Jahr 2000 absinken wird.

In den letzten 10 Jahren hat sich der Anteil der besonders verbrauchsguenstigen Diesel-PKW an den Neuzulassungen staendig erhoeht. Dieser Trend wurde durch das verbreiterte Angebot der Fahrzeugindustrie sowie die Kraftstoffpreisentwicklung in den letzten Jahren noch erheblich verstaerkt. Dieser Trend wird anhalten. Es ist zu erwarten, dass der Neuzulassungsanteil der Diesel-PKW langfristig etwa 30 Prozent erreichen koennte. Damit waere bis zum Jahr 2000 ein Bestand von Diesel-PKW in Hoehe von etwa 6 Millionen Fahrzeugen vorstellbar, was eine Verfuehfrachtung des gegenwaertigen Bestands bedeuten wuerde.

In den letzten Jahren wurden die Forschungen und Bemuehungen zur

Entwicklung alternativer Kraftstoffe und Antriebsarten stark intensiviert.

Waehrend die Entwicklung von Alternativkraftstoffen in Teilbereichen schon weit fortgeschritten ist, kommt die Entwicklung von alternativen Antriebsarten nur zoegeerid voran. Eine vielversprechende und auch am meisten diskutierte Alternative ist der Elektroantrieb. Dabei ist die Idee des Elektroautos keineswegs neu, denn Elektrofahrzeuge gibt es bereits seit etwa 1890. Aufgrund der geringen Energiespeicherkapazitaet ihrer Batterien waren ihre Nachteile hinsichtlich Reichweite, Fahrleistungen und Auftankzeiten so gross, dass sie sich nicht behaupten konnten. In letzter Zeit wurden einige bemerkenswerte Fortschritte in der Weiterentwicklung der Batterietechnologie erzielt. Doch, die vorherrschende Antriebsart der PKW wird deshalb bis zum Jahr 2000 der klassische Verbrennungsmotor bleiben.

Ausgelost durch die Geschehnisse auf den Oelmaerkten, sind, wie zuvor skizziert, Entwicklungen in Gang gesetzt worden, die alle auf eine langfristige Senkung des Kraftstoffverbrauchs zielen und nicht mehr umzukehren sind. Auch die Autofahrer unterstuetzen diese Einsparbemuehungen. Langfristig wird sich der Verbrauchs-rueckgang verstaerken, wenn konstruktiv bedingte Einsparungen zunehmend an Bedeutung gewinnen.

In der vorliegenden Prognose wurde bis zum Jahr 2000 ein gegenueber 1980 um 4,6-6,7 Mio. Fahrzeuge ansteigender PKW-Bestand vorausgesagt. Aufgrund verbesserter Fahrzeugtechnik, veraendelter struktureller Zusammensetzung des Bestands (Hubraum, Antriebsart etc.), sinkender Jahresfahrleistungen und rationaler Fahrweisen wird demgegenueber beim Kraftstoffbedarf fuer PKW ein Rueckgang in Hoehe von 7-8 Mio. Tonnen (bezogen auf den Energiegehalt des Benzins) erwartet. Das entspraecht gegenueber heute einem Minderverbrauch an Kraftstoffen von rund 30 Prozent, trotz eines gleichzeitig um 20-30 Prozent wachsenden PKW-Bestands. Oder anders ausgedrueckt: Der zunehmende PKW-Bestand wuerde bei unveraenderter Gueltigkeit der gegenwaertigen technischen und verhaltensmaessigen Voraussetzungen im Jahr 2000 einem Mehrverbrauch gegenueber heute in Hoehe von 5-7 Mio. Tonnen hervorrufen. Zusammengenommen ergeben sich somit aus dem rechnerischen Mehr- und dem erwarteten Minderverbrauch bis zum Jahr 2000 voraussichtliche Kraftstoffeinsparungen von rund 55 Prozent oder 13-14 Mio. Tonnen.

Vor dem Hintergrund dieser Erwartungen duerfte die Sorge um die Sicherheit der kuenftigen Kraftstoffversorgung viel von ihrer Bedeutung verlieren.



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The Dawn of a New Age in Manufacturing

We are at the dawn of a new age in manufacturing. By the end of this century, many of our metalworking factories will be hardly recognizable. They will be lightly manned or unmanned plants, filled with intricate, fully automated machines linked by robots and other materials-handling equipment and completely integrated by a hierarchical network of computers.

This will be true not only for the USA and the Federal Republic of Germany, but very likely for all of the major industrialized nations.

The industrialized world appears to be poised on the threshold of a powerful widespread surge in the accelerating drive toward the automated metalworking factory. Recessionary forces have, in most countries, retarded the natural advance of automation. However, these same forces are being more clearly recognized today as further justification for the integrated multi-machine manufacturing systems.

Although the initial investment is high, we have little choice but to follow this path. This is particularly true if we are to maintain any sense of balance throughout the world, if the rest of the industrial world is to stay competitive with Japan. That nation's dedication to the highest possible levels of automation and its aggressive world marketing have already

resulted in severe dislocations elsewhere.

But Japan is not the basic cause of our present intense mutual interest in the automatic factory. Japan has only added the factor of immediacy. The real forces had been long in motion.

Most observant industrialists with manufacturing responsibilities know of Milacron's principal scientist, Dr. Eugene Merchant. (He was the first recipient of the City of Berlin's coveted George Schlesinger Prize.) As early as 1961, he had technologically clearly defined to the world the manufacturing system concept and its future. And by 1975, he had brought into sharp focus the

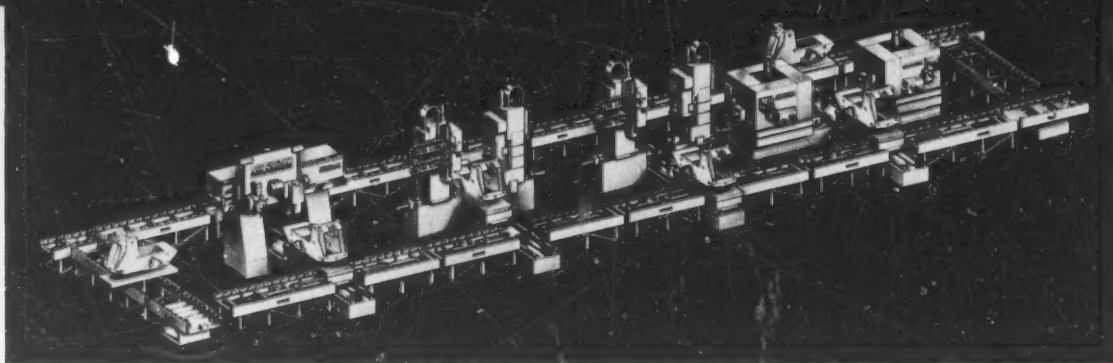
By the end of this century, many of our metalworking factories will be hardly recognizable.

profound changes occurring in economic, social and environmental influences on manufacturing—changes that are propelling us into a highly computer-automated manufacturing future.

Unfortunately for the USA, industrialists elsewhere were listening to Dr. Merchant more intently than were those at home. And from 1975 onward Japan moved swiftly and



by Frank T. Curtin
Group Vice President-Machine Tools
Cincinnati Milacron



Japanese are leaning on robots and even, in a few cases, have full computer integration—the automatic factory.

purposefully to take a commanding world position in several key metalworking industries. I should say, in *additional* key industries, since they had already achieved deep penetration of world markets in such diverse fields as steel and optics.

What Japan had realized and acted upon more effectively than any other nation was the reality that a shrinking world means a worldwide marketing arena and that the future encompasses and is encompassed by a world community with ever more fragile and falling or fallen nationalistic barriers. The Japanese also knew that this future could be telescoped into today by their ability to marshal all their resources and act in concert to achieve the common goal.

Man has always aspired to greater freedom of expression, to greater knowledge, to a wider choice of vocation and avocation, to better health, to greater comfort, to an increasingly better life, to just plain "more." And he always will. Even if we should ever reach a global zero population growth, which is highly unlikely, man has an enormous appetite which will never be satiated and which provides an ever-expanding market. The Japanese know this.

The Japanese also know that if you can offer better value or lower cost, or both, you can fare very well in the marketplace. They have also learned the economies of scale... that if you can produce more of a product, you can produce it for less. What they haven't yet learned fully, but will, is how to gauge the size of the market. Nor do they seem to have fully learned that if you help wreck a nation's economy, that country ceases to be a good customer.

The Japanese have adopted and adapted the best and the latest in Western technology to their own products. And most recently they've done likewise in the manufacture of those products. They no longer make a lower-cost product—like an automobile, or a milling machine—just because of the availability of labor for their labor-intensive plants. Because now they have capital-intensive plants with the latest, most modern, and most sophisticated equipment. And increasingly they are leaning on robots and other advanced automation and even, in a

few cases, have full computer integration—the automatic factory.

But there are other more subtle forces at work, driving us into this new era. What and where are these forces?

Manufacturing in general and the metalworking industry in particular are today under great pressure caused by rising costs of energy, materials, labor and capital, and intensifying worldwide competition. While these trends will be with us a long time, the problems facing manufacturing today run still deeper. They stem from the very nature of the manufacturing process itself.

Most manufacturing is not mass production. In metalworking, for example, more than three-quarters of the output is low volume, with individual components produced in batches of fifty units or fewer. And the process of manufacturing in small quantities is characterized by frequent disruptions, slow through-put, and low utilization of capital equipment.

While industry has had good success designing automatic equipment to produce thousands of identical parts, it has experienced great difficulty in automating the making of thousands of different parts in small quantities. Since each manufactured product requires a unique set of operations to be performed in a specific sequence, the greater the number of different parts, the more complex the process becomes.

This complexity makes low-volume production especially vulnerable to disturbances, both internal and external. Engineering and design modifications, late arrival of materials and tooling, machine breakdown, priority changes... all are commonplace occurrences, and each disrupts the production process.

A key objective in manufacturing is to get the right parts to the right machine at the right time. Too much or too soon creates excess in-process inventory. Too little or too late means idle machines and delayed shipments. The result in any of these cases is a poor use of capital, in the form of excess in-process inventory and/or under-utilization of equipment.

Our studies show that in metalworking only five percent of a part's time in the shop

is actually spent on a machine. The other 95% of the time the part is in transit or (usually) just lying around, waiting between operations, taking up valuable floor space, inflating in-process inventories and, of course, tying up capital.

Another facet of the problem in low-volume manufacturing is the very low utilization of capital equipment. Few metalworking factories are able to run second or third shifts, even during periods of high demand. This, combined with time lost to vacations, holidays and non-productive shop-related work, means that *most capital equipment in metalworking is working only one hour in seventeen.*

In the long term it will not be possible to improve utilization of equipment simply by hiring more people. Demographic studies clearly indicate that a declining percentage of the U.S. workforce is choosing careers in manufacturing... even in the current recessionary period. This is true, also, elsewhere in the industrial world. Our youth are increasingly less willing to work in what they perceive to be a hostile work environment. Or to put up with hard, heavy, repetitive, uninteresting work.

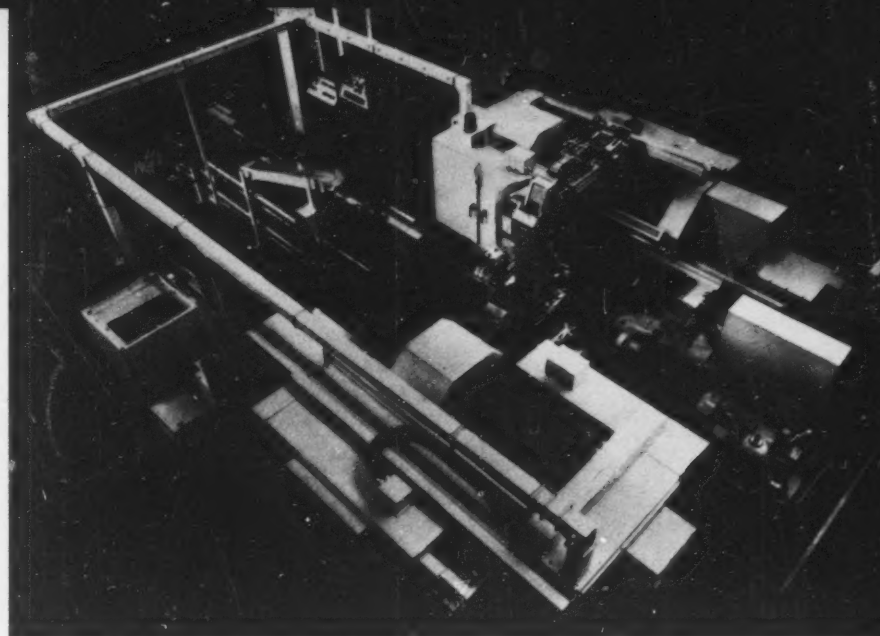
In today's economically difficult and highly competitive times, manufacturers must find ways to overcome internal inefficiencies and to free up working capital by increasing equipment utilization and decreasing in-process inventory. New technologies have emerged that will make this all possible. It's the availability of these technologies that heralds the dawn of a new age in manufacturing.

Some of the new technologies are sub-sets of what is commonly termed *electronic intelligence*. And the key to the development, implementation and integration of virtually all of the other applicable technologies is *electronic intelligence*.

Electronic intelligence is already revolutionizing a number of industries, such as communications, banking, and medicine. And today the computer/microprocessor is beginning to be applied to virtually every phase of the manufacturing process as well.

Engineers use computer-aided design systems to speed up the drafting process. Interactive graphics allow them to construct drawings quickly, while the computer performs the numerical calculations and stores the information. Computer-aided engineering means fewer errors and much more analysis at lower cost.

Production planners use computers to reference previous manufacturing plans and, through simulation and modeling techniques, construct better plans. The computer maintains and gives instant access to a com-



mon body of information from other departments, including up-to-the-minute status of raw materials, inventory, and availability of plant machinery. Computers are assisting every key production function, from forecasting and capacity planning to inventory management and scheduling of work flow.

On the top floor, computer control machinery creates a degree of versatility never before possible. The benefits are numerous. Computer-controlled machine tools, for example, are much easier to operate than manually controlled machines.

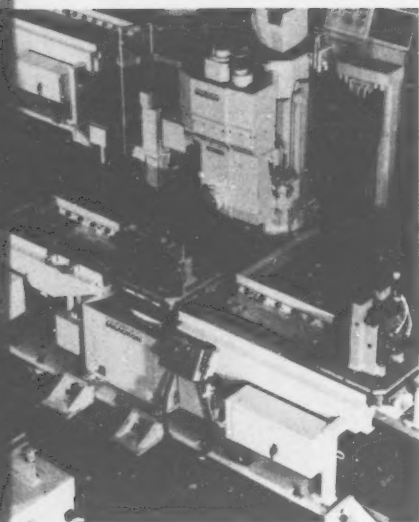
As a result, operators don't have to spend years acquiring the skills formerly needed to turn out precision work. Very often they quickly become responsible for two or more machines.

The computer is the ideal tool to attack head-on the major inefficiencies of low-volume manufacturing. In the future, computers will do more than just process information. They will control not only machine operation but also material and tool handling and work scheduling throughout the plant. The use of computers will reduce in-process inventory, increase equipment utilization, improve the return on invested capital, and free up working capital.

But all of this is just beginning. For one thing, to perform effectively most computer systems need an extensive amount of data about the business, and building this database will take time. People will have to change the way in which they work and think. Job functions will change. Internal departments will be reorganized. The production floor itself will be rearranged.

The electronic "revolution" will actually be an evolution, beginning with individual computer-aided functions, and building

Most capital equipment in metalworking is working only one hour in seventeen.



The computer is the ideal tool to attack head-on the major inefficiencies of low-volume manufacturing.

toward integrated systems step by step. When the fully automated shop floor is finally integrated with computerized systems for design, planning, production management, scheduling, and so on, we will have created the factory of the future... and manufacturing will have entered a new age.

People will have to change the way in which they work and think. The production floor itself will be rearranged.

In the U.S., in Germany, in any nation, the builders of machine tools, and most other machinery other than automotive, are primarily batch manufacturers—all facing similar problems. Those who will be most successful over the next decade will be those who are able to both inflate their batch sizes for economies of scale and also move into effective use of truly flexible multi-machine systems.

Batch sizes can be enlarged by expanding a company's markets internationally, aggressively selling anywhere and everywhere those products the company can build best and most profitably. Batch sizes for machining, for example, can also be enlarged by Group Technology techniques which gather parts into part families on the basis of commonality of part features and required processing. Computer-aided design will further facilitate this development of part families, minimizing the incidence of totally unique parts for which the production requirement is extremely low.

Computer-controlled multi-machine manufacturing systems featuring high flexibility will be used extensively by batch manufacturers. Some will be dedicated to small families of very similar parts. Others will be truly flexible, accepting diverse parts in random order for total, or near total, processing.

Today, some of our customers are now ready to tackle a truly flexible manufacturing system. A lot more of them are ready for less complex—though automated—cells, or clusters of several machines, incorporating such production efficiencies as computer-controlled material handling, robotics, and inspection. They may even be looking ahead to the reduced manning of "darkened shop" second and third shifts.

Yet many of our machine tool customers continue to operate quite effectively in the "common practice" mode, using one-on-one or two-on-one machine operation, with typically small batches and random parts flow.

And that's the challenge. Any new machine tool we produce must be adaptable to these three levels of manufacturing, from

stand-alone job shop through essentially unmanned systems, bringing the benefits of computer control to all.

There remain some obstacles to large-scale unmanned, truly flexible manufacturing systems being technologically feasible or economically viable to very many manufac-

turing plants.

The needed computer software is still evolving. Despite the numerous software modules already developed, much is yet to be done and will be done only as further experience is gained through actual system operation.

Nor does industry yet have all the system hardware answers. We have accomplished many feats, at least exploratorily: automatically changing grippers on robots, delivering replacement tools by computer-directed manless carts and automatically interchanging such tools, even the capacity of exchanging full tool storage matrices on automatic tool-changing turning centers and machining centers. But still much more work needs to be done in these same areas before there can be any great universality of these approaches.

And there are some immensely formidable problems. How, for example, will we accommodate any appreciable range of workpiece diameters on a lathe? Even the automatic loading/unloading on certain types of machines is still very much of a problem.

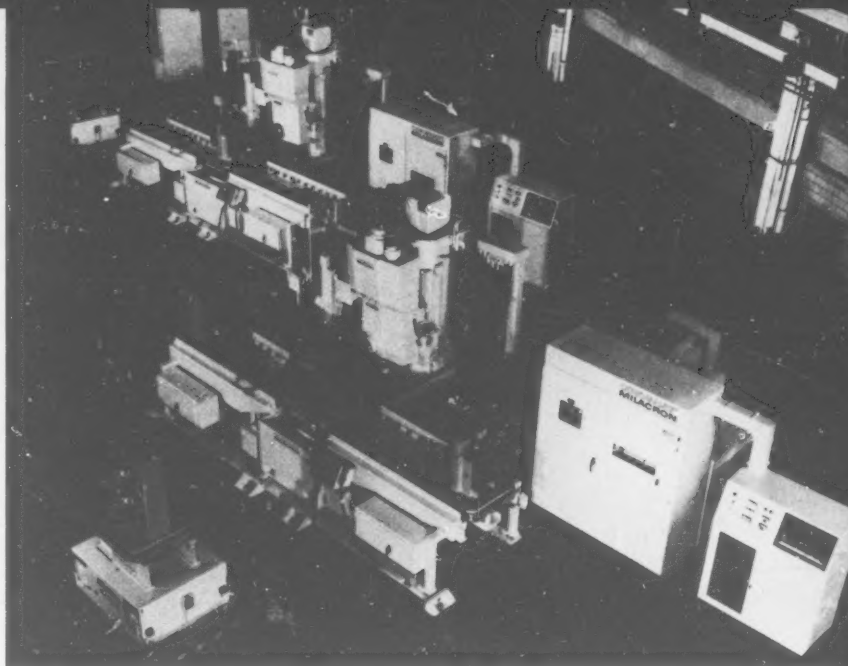
For machines to run automatically through the night without human intervention, we must have the means for adverse occurrences to be detected and corrective action taken automatically. Much has already been done in this direction. In many cases we can anticipate trouble and automatically shut down the machine before damage is done. We can even modify the machine speeds and feeds automatically so as to delay any machine shutdown or even automatically rush a quick-fix of the impending problem. But not in every case, on every kind of machine.

Here we have outlined the nature of key problems faced by both U.S. and German metalworking industries, the direction of their solution, and some of the obstacles to be encountered.

We are tremendously optimistic about the future, knowing that present economic problems mean only much more pent-up human

needs and desires, and that resourceful peoples will find their way through today's swampy conditions. And the more astute and resourceful manufacturers are already taking the lead and gearing up for tomorrow.

In many of their plants, there will soon be islands of automation using state-of-the-art technology. Of a modular nature, they will be expandable and connectible. As time progresses, the gaps between these islands will be bridged and the "islands" linked together to form the computerized automatic factory that most authorities now envision. ■



DEUTSCHE ZUSAMMENFASSUNG

Der Anbruch eines neuen Zeitalters fuer die industriellen Produktionsmethoden

Der Autor zeigt Modernisierungsprobleme auf, die sich in der amerikanischen und der deutschen Industrie besonders bei der Metallverarbeitung in naher Zukunft stellen werden, die Richtung, in der sich Loesungen zeigen, aber auch einige Schwierigkeiten, denen begegnet werden muss. Die entschlossensten Unternehmer ruesten sich nach Meinung des Autors schon heute fuer die Nachfrage und die Herausforderung von morgen mit dem Ergebnis, dass zu Ende unseres Jahrhunderts viele Betriebe kaum noch wiederzuerkennen sein werden. Es werde Produktionsstaetten geben, die nur noch eine geringe oder gar keine Belegschaft mehr haben. In diesen Betrieben werden integrierte, vollautomatische Maschinen arbeiten, die ihrerseits ueber Roboter und andere Materialtransporteinrichtungen verbunden und von Computern gesteuert sein werden. Das soll nicht nur fuer die USA und die Bundesrepublik Deutschland wahr werden, sondern fuer alle groesseren Industrienationen der Welt.

Obgleich der aufgezeigte Weg teuer sei, meint der Autor, muesse er jedoch beschritten werden, um das industrielle Gleichgewicht weltweit aufrechtzuerhalten, d.h. um in den industrialisierten Laendern wettbewerbsfaehig gegenueber Japan zu bleiben.

Doch sei Japan nicht der Hauptgrund fuer das gegenwaertige intensive Interesse an der Automation in den Fabriken. Die japanische Entwicklung habe nur zur Beschleunigung der Ablaeufe beigetragen.

Die meisten Manager im Herstellungsbereich haben nach Meinung des Verfassers schon einmal von Dr. M. Eugene Merchant gehoert, dem Chefwissenschaftler der Firma Milacron. Er war der erste Laureat des Berliner George-Schlesinger-Preises. Schon 1961 habe er das technologische Konzept fuer den Herstellungsbereich klar definiert. 1975 habe er die tiefgehenden Veraenderungen beleuchtet, die aufgrund wirtschaftlicher, sozialer und umweltbedingter Einfluesse im Herstellungsbereich vor sich gehen, Veraenderungen, die in eine hoch computerisierte und automatisierte Zukunft der Herstellungsmethodik weisen.

Der Autor beschreibt sodann die Kraefte, die ein Zeitalter neuer Produktionstechniken herbeifuehren:

Die Herstellungsablaufe ganz generell, und besonders in der Metallverarbeitung, stueuden heute unter dem zunehmenden Druck steigender Kosten fuer Energie, Material, Arbeit und Kapital, sowie wachsendem weltweitem Wettbewerb. Die besonderen Probleme im speziellen Herstellungsbereich resultierten jedoch aus den dort notwendigen Ablaeufen selbst.

Nur bis zu einem gewissen Grad seien Massenproduktionsmethoden in der Herstellung moeglich. In der Metallverarbeitung beispielsweise bestueuden dreiviertel des Gesamtausstoesses aus kleinen Stueckzahlen, mit Einzelteilen, die oft nur in Partien zu 50 oder kleiner hergestellt werden muessten. Diese Spezialherstellungsprozesse wuerden dann noch haeufig unter-

brochen und fuehrten zu niedriger Nutzung der Anlagegueter. Und hier liegt nach Meinung des Verfassers der Punkt. Waehrend man heute bei der automatischen Herstellung grosser Serien schon beachtliche Erfolge erzielt habe, sei man bei der Erzeugung der vielen tausend unterschiedlichen Teile in kleinen Mengen auf erhebliche Schwierigkeiten gestossen. Da nun jedes hergestellte Erzeugnis einen besonderen Produktionsprozess erfordere, in speziellen Sequenzen, werde der Herstellungsprozess immer komplexer, je groesser die Anzahl der Einzelteile des Enderzeugnisses sei.

Aenderungen in Technik und Design, verspaeetetes Eintreffen von Material und Werkzeugen, Stoerungen im maschinellen Bereich, Aenderungen der Lieferprioritaeten—all das seien haeufige Erscheinungen im Herstellungsprozess, von denen jede einzelne den optimalen Produktionsablauf stoere.

Besonders wichtig bei der Herstellung sei es, das richtige Teil zur richtigen Maschine im richtigen Zeitpunkt zu bekommen. Zu viel oder zu schnell bewirke Ueberschuss- und Lagerschwierigkeiten. Zu wenig und zu spaet bedeute ungenutzte Maschinenkapazitaet und verspaeetete Lieferung. Das Ergebnis sei stets dasselbe: schlechte Nutzung des eingesetzten Kapitals.

Studien in der Firma, fuer die der Verfasser arbeitet, haben nach dessen Mitteilung gezeigt, dass nur 5% der Zeit, die sich ein Teil innerhalb einer Fabrik befindet, tatsächlich mit der maschinellen Bearbeitung dieses Teiles ausgefuellt ist. Die uebrigen 95% der Zeit ist das Teil auf dem Transport innerhalb des Werkgeaendes, oder es liegt einfach herum, oder es wartet zwischen zwei Bearbeitungsvorgaengen und nimmt kost-

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bare Lager- und Grundflächen in Anspruch, treibt die innerbetrieblichen Bestände in die Höhe und bindet Kapital.

Eine weitere Facette des angesprochenen Problems sieht der Autor in der niedrigen Nutzungszeit der Anlagegüter bei der Produktion von Kleinserien. Nur wenige metallverarbeitende Betriebe seien in der Lage, zweite und dritte Schichten zu fahren. Rechne man noch Zeitverluste durch Ferien, Feiertage und nichtproduktive Tätigkeiten am Arbeitsplatz hinzu, so komme man zu dem Ergebnis, dass die meisten Anlagen in metallverarbeitenden Betrieben nur während einer von siebzehn Stunden wirklich ausgelastet seien. Der Autor führt weiter aus, dass sich diese Situation auf Dauer nicht durch die Anwerbung weiterer Arbeitskräfte ändern lasse und dass daher neue Wege gefunden werden müssten, um mit innerbetrieblicher Ineffizienz fertig zu werden und Betriebskapital freizusetzen, indem man die Nutzungszeiten der Herstellungseinrichtungen ausdehnt und die innerbetrieblichen Bestände verkleinert. Neue Technologien seien entwickelt worden, die solche Verbesserungen möglich machten. Die Verfügbarkeit dieser neuen Technologien bringt nach Meinung des Verfassers den Anbruch des neuen Zeitalters im Herstellungsbereich.

Den Schlüssel zur Entwicklung,

Anwendung und Integrierung zu buchstäblich allen anderen Arten infrage kommender neuer Technologien sieht der Verfasser in der elektronischen Intelligenz.

Die elektronische Intelligenz revolutioniere bereits heute eine Reihe von Industrien, wie beispielsweise die Bereiche Kommunikation, Bankwesen und Medizin. Auch in nahezu jeder Phase des Herstellungsprozesses finde die Computer-Mikroprozessortechnik ihren Einsatzbereich.

In der Fabrikation habe selbst ermögliche der Computereinsatz eine Vielseitigkeit, die man vorher nicht gekannt habe. So seien beispielsweise elektronisch gesteuerte Werkzeugmaschinen wesentlich einfacher zu handhaben als handgesteuerte Einheiten. Bemerkenswert sei hier, dass die befassenden Facharbeiter nicht mehr Jahre mit der Ausbildung zubringen müssten, um Präzisionsarbeit leisten zu können. Sie könnten häufig schon nach kurzer Zeit an zwei und mehr Maschinen gleichzeitig eingesetzt werden.

All das stehe jedoch noch am Anfang, betont der Autor. Zum einen müssten die Computersysteme, um effektiv arbeiten zu können, mit einer Vielzahl von Daten über den Geschäftszweig gefüttert sein und der Aufbau der entsprechenden Datenbasis sei zeitaufwendig. Die Menschen

müssten die Art und Weise, in der sie arbeiten und denken, ändern. Tätigkeitsmerkmale würden sich ändern. Betriebsabteilungen müssten reorganisiert und der Werkshallenbereich umgestellt und neu arrangiert werden.

Die elektronische Revolution sieht der Autor als Evolution, die mit einzelnen computerunterstützten Funktionen ihren Anfang nimmt und Schritt um Schritt auf ein integriertes System hin wächst. Er kommt zu dem Schluss, dass in vielen Herstellungsbetrieben in naher Zukunft in sich geschlossene, aber noch vereinzelt Bereiche der Automation eingerichtet werden, die modernste Technologien einsetzen. Entsprechend der Modulartechnik werden diese Bereiche vergrößert und verkleinert werden können. Im Laufe der Zeit sieht der Verfasser die Lücken zwischen den einzelnen Bereichen gefüllt und die Bereiche miteinander verbunden zur computer-gesteuerten automatischen Fabrik, wie sie von den meisten Autoritäten in dem Bereich der Herstellungstechnik bereits avisiert werden. Wenn schließlich der vollautomatisierte Werkshallenbereich mit computer-gesteuerten Systemen für Entwurf, Planung, Produktionsablauf, Warendurchlauf usw. integriert ist, wird, so der Autor, die Fabrik der Zukunft geschaffen sein, das neue Zeitalter wird begonnen haben.

Where on earth can you still find a great place to do business?

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Illinois today is a prime location for headquarters, manufacturing, and R & D facilities of companies of all sizes from all sectors of the economy.

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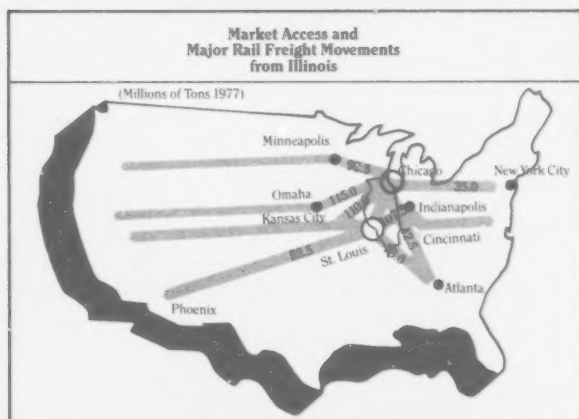
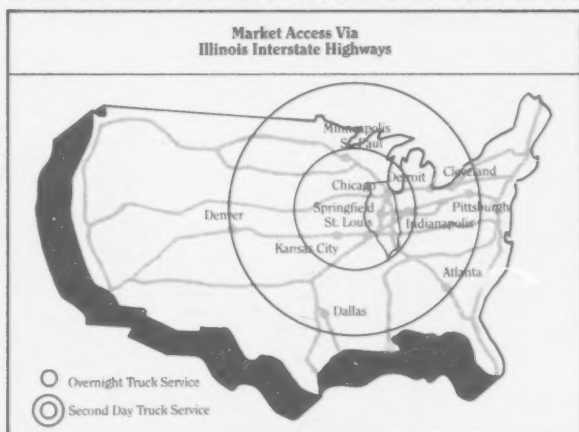
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Siemens...On the scene.

The German Machine Tool Industry

Its Home Is The World Market

Within the wide realm of German industry the machine tool sector occupies a key position. As the "outfitter of the economy" this branch is in essence responsible for the modernity and capability of a great deal of our nation's production apparatus.

With a work force of more than one million and a sales volume of over DM 125 billion, the German machine tool industry is the nation's largest industry. Its high competence is impressively underlined by its position on the world market. In 1981 German machine tools valued at nearly DM 70 billion were exported. Since simultaneously only DM 24 billion were imported, the machine tool sector achieved a record trade surplus of about DM 46 billion. With this result the German machine tool industry occupies second place—only slightly behind the U.S.A.—on the world list of machine tool producers, far ahead of Japan, Great Britain, and France.

Characteristic of this industry branch is its predominantly medium-sized structure. About 80 percent of firms have fewer than 300 employees and only about 10 percent more than 500. This trend in firm size is not coincidental and it holds true for the respective industries in the U.S.A. and other lands as well. It reflects the fact that in this industry every plant, depending on its manufacturing task, has an optimal size. The medium-sized

structure is also encouraged by the industry's care in fulfilling the individualized needs of its clientele: Not only entire product lines are produced, but individual pieces and specially-designed goods as well.

The success of German machine tools on world markets is not only a function of legendary efficiency in meeting delivery schedules, very good service, and flexibility in meeting customers' needs, but also lastly is an expression of technical quality and favorable price/capability relationship. Research and development have an especially high position. The application of resources and of highly qualified personnel is a major preoccupation; the Federal Republic occupies a top position in this regard, second only to the United States in the devotion of resources for research and development.

An international comparison demon-

About 80 percent of firms have fewer than 300 employees and only about 10 percent more than 500.

strates just how remarkable is the product depth and product diversity of the German machine tool industry. In comparison to Japan, which has dominated a few fields through the concentration on finished

by A. Batschari

Deutscher Maschinen-und
Anlagenbau e.V. Verband



assembly series (which for many areas of the machine tool industry is unimportant) there is no sector in the industry in which on world measure the German industry does not count in the front rank. And this is not a recent phenomenon. It has been the case for decades.

Among the more than 30 subgroups of the machine tool industry the instrument industry holds first rank. But it will be increasingly challenged by the dynamically growing office and information technology sector, which in the foreseeable future will attain the front-running position. In positions 3-6 follow four branches, which in size are only marginally differentiated from each other: propulsion technology, machinery for agriculture, building machinery, and output technology. At a certain distance follows a fifth group—that which contains printing and paper machines, food machinery, packing machinery, general air technology, power machinery and instrument panels.

When we observe the development of these sectors through the appropriate statistical data, it becomes clear just how important foreign trade has proved to be an impetus to growth. The negative outcome of domestic developments—in the last 2 years investment has fallen off due to general economic conditions as well as interest burdens and falling profits—has been compensated for by rising foreign contracts. By this means, the export quota in the German machine tool industry has grown further and has reached an average in the machine sector of 60 percent.

Moreover, there are branches of the industry which have far surpassed the average in exports. The textile machinery and the printing/paper industries practically live from developments on export markets alone. A good 80-90 percent of these products are disposed of on world markets. The neglected investment potential, not only in the Federal

countries on practically all continents, in order to improve sales prospects.

Up to the turn of the year 1981/1982 surprising success had been achieved in these efforts. The change of the world economic environment, especially the sharp rise in indebtedness of important national export markets such as Mexico, Brazil, and Argentina, have led to a perceptible decline in foreign contracts. In addition, these developments were accelerated by problems in many Eastern European countries, such as Poland and Rumania, but also in the OPEC nations, in recent years prominent supporters of German machine tool exports. German exports have slackened off to these oil-rich nations in the wake of falling petroleum prices. As a result of world-wide economic and investment weakness the German machine tool industry is experiencing a sudden tailspin in the acquisition of foreign contracts. During the first 10 months of 1982 the contract volume remained 16 percent below that of last year, measured in constant prices. Since simultaneously the domestic volume has likewise fallen off by 9 percent, total contract volume has fallen off by 13 percent.

The growing problems in the world economy have led many nations, out of short-term motivation, to reach into the old bag of protectionist tricks. Hence the dangers to

The negative outcome of domestic developments has been compensated for by rising foreign contracts.

Republic but also in traditional European markets, has forced more and more branches of the machine industry to open up new markets in addition to those which already exist. This applies not only to large and medium-sized firms, but to a similar degree to small enterprises as well. Through the application of manpower and capital, bases have recently been established in the newly-industrialized countries and developing



free world trade have grown accordingly. Even though everyone is aware of the dangers which arise under protectionism, all kinds of these measures have been taken up in recent months. We are keenly aware of the implications of both open and hidden forms of import restrictions. Beyond this, more and more governments are attempting to master the situation via currency manipulation, export subsidies, export financing

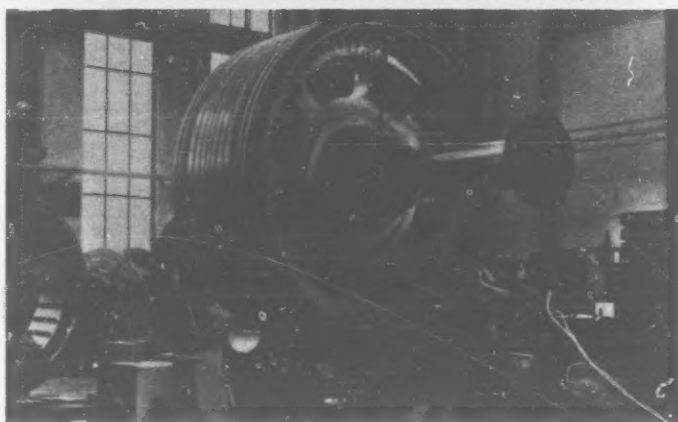
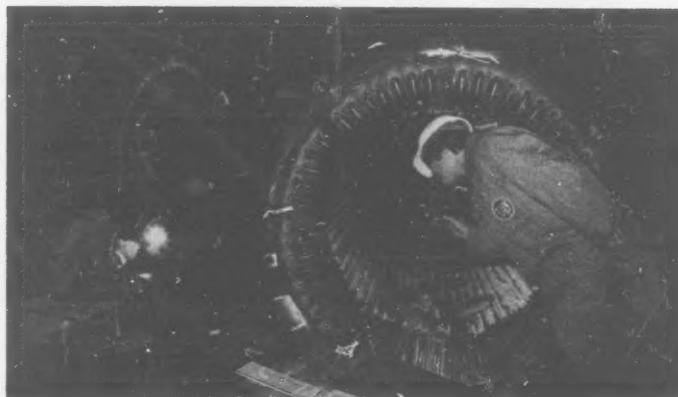
incentives, and so-called "local content" laws. The grave difficulties and the laboriously achieved compromises of the recently-concluded GATT round in Geneva must be understood as a serious signal that free world trade must be given one more chance.

When one observes present developments from a medium- and long-term perspective, the exceptional market potential of the machine tool industry is confirmed. This is accounted for by prominent technical developments in the field of micro electronics. This new basic technology, which has already found application in many machine items, will in coming years further impact in large measure upon the machines of the next generation, as well as revolutionize production.

In addition to technological changes, which will lead to favorable prospects for the industry in the medium and long term, an enormous potential demand for machine tools exists in both the industrialized nations as well as in the newly industrialized and less developed countries. This can be easily seen by means of a single example: While in America DM 1,100 and in Germany DM 900 are spent per capita on machinery, in Brazil this amount is only DM 150, and even in India only DM 10. Even though this analysis may be a simplification, it shows clearly that a thoroughgoing industrialization would realize a great market potential.

Even if the glowing prospects for export markets in less developed countries—which follow from the above considerations—are only possible in the distant future, at the present time, in the past, and tomorrow one of the most important markets for German machine tools will be the United States. As importers of these German products the US hold a second position, indeed considerably behind France but far ahead of Italy and Great Britain. Despite the economic recession in America, which as in Germany has lasted longer than previously expected, German suppliers in 1982 as well as in 1981 have been able to extend their shipments. In the process, those machine tool sectors have been most prominent which have served U.S. products which are most R&D intensive. What these numbers do not reflect, is the development of new American orders during the current year, which from the German view has proven to be unfavorable. Until now this development has not been able to be quantified.

Despite high exports to the United States, the German/US trade balance in the machinery sector shows only a modest plus, since the Federal Republic has imported, in ever-greater amounts, machine goods from the United States. With a total German



import share of 20 percent, the U.S. is by far the Federal Republic's leading foreign supplier of machine tools. In the information technology and office machine sphere, imports from the U.S.A. account for over half of the total.

The regeneration of world economic growth will depend upon American success in moving out of its depression and setting its investment schedule in order once more.

Despite the economic recession in America, German suppliers in 1982 as well as in 1981 have been able to extend their shipments.

Although in recent months the falling interest rate tendencies have extended worldwide,



DEUTSCHE ZUSAMMENFASSUNG

Mit mehr als 1 Million Beschäftigten und über 125 Mrd DM Umsatz ist der Maschinen- und Anlagenbau die grösste Branche der deutschen Industrie. Im Jahre 1981 wurden für nahezu 70 Mrd DM deutsche Maschinen und Anlagen exportiert. Da gleichzeitig nur für knapp 24 Mrd DM Maschinen und Anlagen importiert wurden, steuerte die Branche einen Rekordüberschuss von rund 46 Mrd DM zum Ausgleich der Handelsbilanz bei. Mit diesem Ergebnis rangiert der Maschinen- und Anlagenbau der Bundesrepublik nur knapp hinter den USA auf dem zweiten Platz der Weltrangliste mit grossem Abstand vor Japan, Grossbritannien und Frankreich.

Charakteristisch für diesen grossen Industriezweig ist die überwiegend mittelständische Struktur. Rund 80 Prozent der Unternehmen haben weniger als 300 Beschäftigte und nur zehn Prozent mehr als 500. Das Verhältnis zwischen Klein-, Mittel- und Grossbetrieben ist nicht auf die Bundesrepublik beschränkt, sondern trifft in ähn-

licher Weise auf die USA und andere Länder zu.

Die Markterfolge der deutschen Maschinen- und Anlagenbauer sind nicht nur auf Merkmale wie Liefertreue, sehr guten Service und Flexibilität gegenüber Kundenwünschen zurückzuführen, sondern letztlich sind sie auch Ausdruck der technischen Reife und des günstigen Preis/Leistungsverhältnisses. Forschung und Entwicklung haben einen ausserordentlich hohen Stellenwert. Hinter den USA rangiert der deutsche Maschinen- und Anlagenbau mit seinen Aufwendungen für Forschung und Entwicklung im Weltmaßstab auf dem zweiten Platz.

Unter den insgesamt mehr als 30 Gruppen des Maschinenbaus nimmt traditionell die Werkzeugmaschinenindustrie den ersten Rang ein. Sie wird allerdings zunehmend hart bedrängt von der unvermindert dynamisch wachsenden Büro- und Informationstechnik, die wohl in absehbarer Zeit auf den ersten Platz vorrücken wird.

Betrachtet man die aktuelle Entwicklung der Branche, so wird rasch deutlich, welche überragende Bedeutung der Aussenhandel für die Gesamtentwicklung der Branche aufweist. Nachdem bereits in den letzten beiden Jahren die Investitionstätigkeit in

internationalen Rate levels still remain high. From this side too, favorable signals must come from the U.S.A., if positive developments in the world economy are to be continued. On both sides of the Atlantic, the creation of a favorable investment climate must be a primary goal of economic policy. Simultaneously every attempt must be made to preserve world trade from the dangers of protectionism.

The U.S. is by far the Federal Republic's leading foreign supplier of machine tools.

Should this succeed, then 1983 may witness an upturn; should this policy fail to produce a departure from present developments, then a drastic deepening of the crisis, with all its negative consequences, must result. ■

der Bundesrepublik aus konjunkturellen Gründen, aber auch wegen der hohen Zinsbelastung und gleichzeitig sinkender Erträge zurückgegangen ist, gelang es, diese Rückgänge durch steigende Aufträge aus dem Ausland reichlich zu kompensieren. Dadurch ist die Exportquote weiter gewachsen und hat im Durchschnitt der Branche einen Anteil von etwa 60 Prozent erreicht.

Es gibt im deutschen Maschinenbau allerdings Sparten, bei denen das Exportgeschäft noch weit über diesen Durchschnittswert hinausgeht. Die Textilmaschinenindustrie oder auch die Druck- und Papiermaschinenindustrie leben heute praktisch nahezu ausschliesslich von der Entwicklung auf dem Weltmarkt. Gut 90 bzw. über 80 Prozent der Produktion werden auf dem Weltmarkt abgesetzt. Bis zur Jahreswende 1982 konnten überraschende Exporterfolge erzielt werden. Die Veränderung der weltwirtschaftlichen Rahmenbedingungen, insbesondere aber die starke Überwindung wichtiger Absatzmärkte, wie z.B. Mexiko, Brasilien, Argentinien führte im laufenden Jahr zu einem immer spürbareren Rückgang der Auftragseingänge aus dem Ausland. Zusätzlich wurde die Entwicklung noch beeinträchtigt durch die Probleme in manchen Ostblockländern, z.B. in Polen und Rumänien, aber auch die

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OPEC-Laender—in den letzten Jahren eine besondere Stuetze des deutschen Maschinen-aussenhandels—mussten 1982 unter dem Eindruck sinkender Oelpreise wesentlich kuerzer treten. Als Fazit der weltwirtschaftlichen Konjunktur- und Investitionsschwaeche erlebt der deutsche Maschinen- und Anlagenbau derzeit eine rasche Talfahrt der Auslandsauftragseingange.

Die zunehmenden Probleme der Weltwirtschaft lassen viele Laender aus kurzfristigen Motiven zunehmend in die alte Trickkiste protektionistischer Massnahmen greifen. Damit wachsen in gefaehrlicher Weise die Gefahren fuer den freien Welthandel. Obwohl jedermann um die Gefahren solcher Protektionismen weiss, werden sie in den letzten Monaten in allerlei Spielarten vorgenommen. Die grossen Schwierigkeiten und die nur muhsam erzielten Kompromisse der juengsten GATT-Runde in Genf muessen als ernstes Signal verstanden werden, dem freien Welthandel noch eine Chance zu lassen.

Betrachtet man ueber die aktuelle Entwicklung hinweg die mittel- und laengerfristigen Perspektiven, so ist festzustellen, dass weltweit ein ausserordentlich grosses Marktpotential fuer den Maschinen- und Anlagenbau besteht. Dies ist einmal auf starke technologische Weiterentwicklungen zurueck-

zufuehren, die mit dem Begriff Mikroelektronik sehr allgemein umrissen sind. Diese neue Basis-Technologie, die bereits in viele Maschinen Eingang gefunden hat, wird in den naechsten Jahren in noch weit staerkerem Ausmass Auswirkungen auf die Maschinen der naechsten Generation haben und in vielen Bereichen die Fertigung revolutionieren. Zusaetzlich zum technologischen Wandel, der mittel- und langfristig zu guenstigen Voraussetzungen fuer den Maschinen- und Anlagenbau weltweit fuehrt, besteht durch das Gefaelle zwischen den Industrielaendern auf der einen Seite und den Schwellen- sowie den Entwicklungslaendern auf der anderen Seite ein enormer potentieller Bedarf an Maschinenbauerzeugnissen.

Wenn auch unter den aktuellen Vorzeichen die eben beschriebenen Bluetentraeume wachsender Absatzmaerkte in Schwellen- und Entwicklungslaendern noch einige Zeit auf sich warten lassen duerften, so sind andererseits die USA gestern, heute und auch morgen einer der wichtigsten Maerkte fuer den deutschen Maschinen- und Anlagenbau. Als Abnehmer deutscher Erzeugnisse liegen die Vereinigten Staaten zwar mit deutlichem Abstand hinter Frankreich, doch mit gewissem Vorsprung vor Italien und Grossbritannien auf einem sicheren zweiten Platz. Trotz der auch in den USA

laenger als erwartet anhaltenden Konjunkturlaute konnten die deutschen Anbieter sowohl 1981 als auch im bisherigen Verlauf des Jahres 1982 ihre Lieferungen deutlich ausweiten. Dabei standen in erster Linie die Bereiche im Vordergrund, die der amerikanischen Industrie know-how-intensive Produkte verkaufen konnten. Was diese Zahlen allerdings nicht widerspiegeln, ist die Entwicklung der Auftragseingange im laufenden Jahr, die auch im USA-Geschaeft aus deutscher Sicht Rueckschlaege aufweisen.

Trotz der hohen Exporte in die USA weist die Handelsbilanz im Bereich Maschinen- und Anlagenbau gegenueber den Vereinigten Staaten nur ein geringfuegiges Plus auf, da die Bundesrepublik ebenfalls in erheblichem Umfang Erzeugnisse aus den USA importiert. Mit einem Anteil von rund 20 Prozent sind die Vereinigten Staaten mit grossem Abstand der fuehrende Lieferant von Maschinen und Anlagen. Dabei entfaellt etwas mehr als die Haelfte allein auf die Einfuhr von Buero- und Informationstechnik.

Vorrangiges Ziel der Wirtschaftspolitik muss es auf beiden Seiten des Atlantik sein, die Rahmenbedingungen fuer die Investitionstaetigkeit zu verbessern und gleichzeitig alles zu unternehmen, um Gefahren vom freien Welthandel fernzuhalten.

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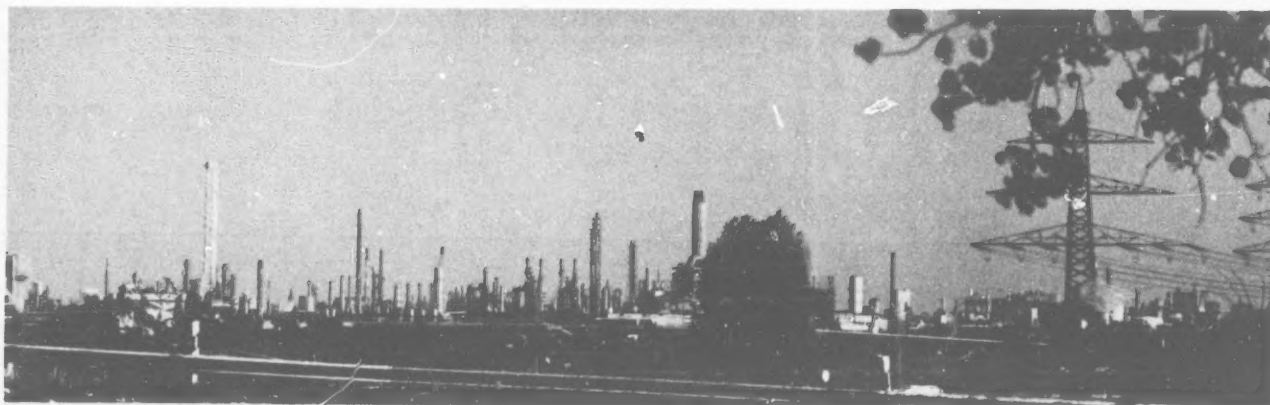
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Henkel

Chemicals and Energy



Upon recalling the turn of the sixties, we are surprised to note that hardly anyone took the trouble to prognosticate or project what the future may bring. At that time we had unshakable faith in continued growth and we had not experienced anything to dampen this optimism; we simply held to the upward trends of the sixties. You will recall that Meadow's "The Limits of Growth" only appeared in 1972. However still controversial, this book, as I look back now, seems to have provided the first recognition that, at least mathematically speaking, growth was headed for a change of venue.

The seventies confirmed much of this change. Having learned our lesson, we approached the eighties much more cautiously. There have been many attempts to predict the outcome of the current decade, but the very circumstances that have made us cautious, namely the second wave of oil price escalations, also cast doubt on the value of such forecasts. We are now in the third year of the eighties, yet the topic has lost none of its relevance.

It has always been difficult, if not impossible, to provide reliable forecasts. What happens tomorrow cannot be predicted merely by grafting yesterday's experiences onto today's possibilities. In the past the chemical industry has learned that all too

often. In the golden fifties and sixties the speed of economic development tended to be underestimated. For many, this meant lost opportunities. In the seventies, growth rates were often overestimated, a two-fold danger, because it could lead to losses. The dire predicament created by excess fiber, commodity plastics, refining and capacities, burdening particularly many European chemical companies now, has become all too apparent. The money invested in superfluous plants is lost either way. Nevertheless, we still require qualitative and quantitative projections that are at least somewhat reliable. We need such guidelines because many corporate decisions are not only costly but we have to live with them for many years into the future.

As a rule, the development of a drug, for instance, takes ten years before it becomes marketable. As much time is needed from the start of exploration of an oil field until the first barrel is lifted. Whatever we launch today must be based on our concepts of what will be needed in the late eighties and nine-

In the fifties and sixties the speed of economic development tended to be understated.



by Dr. Matthias Seefelder
Chairman, Board of Executive Directors,
BASF AG

ties. However fascinating a look into the crystal ball may be, I want to focus on trends evident today, indicators that will determine the development of the chemical industry in the eighties and beyond.

Some considerations are viewed best against the background of the past three decades.

Viewed out of today's perspective, the international agreements providing for the gradual dismantling of protectionism around the globe—for example, through the OEEC, GATT and the European Payments Union—were a major factor spurring the tremendous economic development in the post-war era and benefitted also the chemical industry. At that time, far-sighted political decisions laid the basis for the rapid expansion of world trade.

Today we take these advantages for granted, because we have become accustomed to the free international movement of capital and foreign exchange and the relatively free access to markets across borders as the foundations of world trade.

The courageous decisions to supplant the planned economy with a free market economy played a key role in the economic development of West Germany. It established the framework which made it possible to activate the rebuilding in such a manner that observers could not help but be amazed at the results.

The pent-up demand for capital and consumer goods created by the war furnished a strong stimulant. On the strength of its capabilities, the chemical industry supplied the needs of numerous industrial markets with a broad palette of products and thereby managed to remain always a step ahead of the general economic expansion. The chemical industry's basic conversion from coal as a raw material to modern petrochemistry following the war proved to be a strong impetus to its development.

Compared to coal, liquid or gaseous feedstocks provided investment advantages; moreover, the better hydrogen to carbon ratio in petrochemical raw materials facilitated the industrial scale syntheses. On the basis of petrochemistry the chemical industry was able to develop many new products with interesting applications at attractive prices. Plastics, resins and man-made fibers were launched on their march to success; in the process of replacing traditional materials they provided the chemical industry with additional growth opportunities.

As a result, world sales of chemicals rose in the past three decades from \$35 billion in 1950 to \$717 billion in 1980, thus nominally by a factor of 20 and in real terms about sevenfold. The last of these decades was,

however, already basically different than its two predecessors, because the factors that are the bane of economic life now began to surface then.

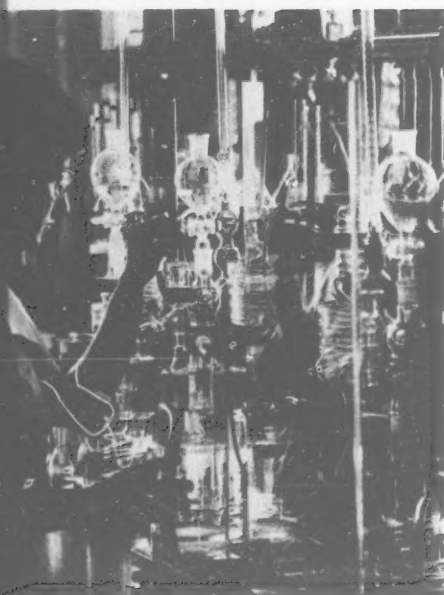
As indicated at the outset, it was in the early seventies that the theses advanced by the "Club of Rome" were the first to shake the widely-held belief in uninterrupted growth. They also signaled a change in values among large sectors of our society disenchanted with the rationalism dominating our world. Lamenting the lack of feeling and quality of life, whatever that may mean, they seek new, so-called ecological forms of life. In their focus on themselves, sensitivities for the overriding concerns are lost and they perceive only such imagined or real problems which threaten their own well-being directly. Is it a coincidence that this trend emerged first in the U.S. during the Vietnam War whose length, course and outcome overthrew many sacrosanct values there?

Consequently, the focus shifted now to the unwanted effects of growth, its encroachment on unspoiled nature, and away from the imperceptible accomplishments to which we had become accustomed and took for granted in any case. The chemical industry, too, was not spared. More about that later.

This new wave of irrationalism is a worldwide phenomenon; in the U.S. the seventies therefore came to be called the "Me Decade" and the surprising success of the mullahs in an Iran moving toward industrialization suffices as an additional example of the force that propels this reorientation.

It was the 1973/74 oil crisis that first made us aware that the limits of growth might have really been reached. The quadrupling of oil prices then, at a time when the world economy was at the onset of declining growth rates anyhow, led to a severe recession which, due to the commercial interrelationships, was felt simultaneously all over the globe. Nevertheless, the world economy adjusted with surprising rapidity to the new price levels of this most important raw material. Even though an uncomfortable feeling of unstableness and uncertain dependency persisted, it still did not suffice to cause those affected to draw the necessary consequences.

The impact of the new wave of oil price increases, beginning in 1979, exceeded the first oil crisis by far. The world was at a much higher level of consumption. In 1978 world oil consumption had surpassed the 3 billion ton level for the first time. In addition, price escalations affected other raw materials, like ores, and, disproportionately, such petroleum products as the refineries' individual fractions and their derivatives, all of which were in high demand. Thus, in the period starting from 1978 to this day, the European



The pent-up demand for capital and consumer goods created by the war furnished a strong stimulant.

chemical industry had to accept price increases of more than 100 percent for its important raw materials naphtha and aromatics. These could hardly be absorbed.

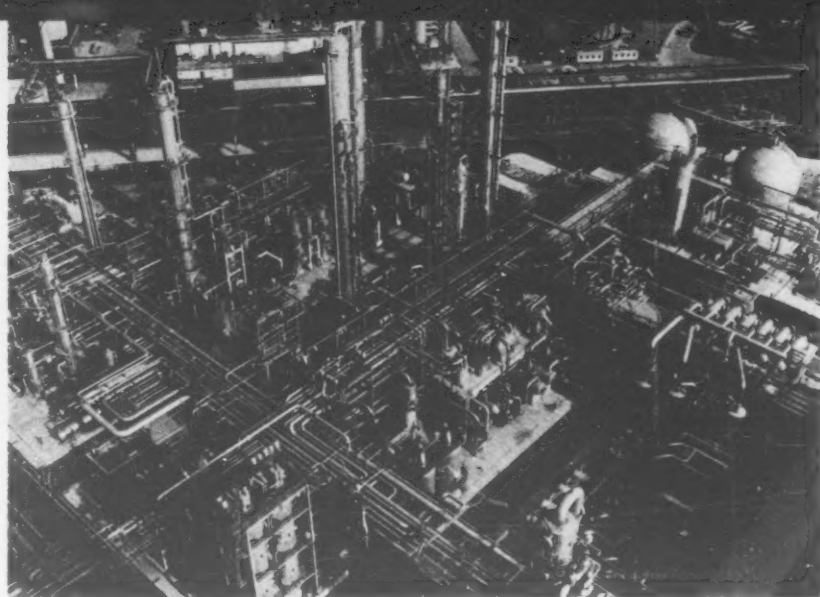
These shocks are the real cause for a number of difficult problems under which not only the chemical industry but the entire world economy has to suffer. The high price for oil initiated first of all a redistribution of enormous proportions in favor of the oil producing countries. The drain of real income out of the industrial nations prompted a worldwide economic stagnation and there is no current evidence pointing to a lasting recovery. This slump has caused the number of unemployed to rise in almost all industrial countries to a level that has not been equalled in a long time.

In addition, large product areas, built on the availability of wastefully cheap energy during the fifties and sixties, now have to cope with massive price increases. The small economic growth rates will not permit the necessary restructuring to proceed in calmness.

Not because the German consumer was more disciplined, but largely on account of the recession, the Federal Republic's imports of crude oil and petroleum products in 1981 were 16 percent lower than a year earlier; yet, the cost for oil still climbed by an additional DM 7 billion to DM 72 billion. That circumstance also impacted the balance of current accounts: Since the last oil crisis the Federal Republic has led a long list of nations with a negative balance on current accounts. In 1981, it still amounted to nearly DM 20 billion. Among the industrial nations only the U.S., Great Britain and, as of 1981, also Japan again registered positive balances on current accounts. The situation is becoming alarmingly critical for a number of near-bankrupt developing nations. This is more likely to make whatever may be a solution of the North-South conflict even more difficult. In this predicament many countries are forced to restrict free trade. It is a short-term palliative that merely postpones the inevitable restructuring.

All these difficulties can only be eliminated if we resolve the raw materials and energy problems. The eighties and probably also the nineties will be critical in this respect.

Let us examine a few raw material and energy facts. Among the Federal Republic's industries, chemicals account for the largest demand of so-called primary energy. With a 13 percent share in total primary energy consumption, chemical enterprises use even more than the equally energy-intensive steel industry. However, only 6 percentage points of the 13 percent are used purely for energy



purposes such as heating, cooling, pumping or as power for electro-chemical processes, for instance, for the production of chlorine. The remainder, roughly 7 percentage points, serve as raw material for the production of basic chemicals. By way of comparison: The worldwide share of basic chemicals is about 4 percent. These raw materials are almost exclusively petroleum products and natural gas. Coal, which served largely as a base for chemical production in Europe into the fifties, has been relegated to a subordinate role as a raw material today.

Therefore the question continues to be raised: With oil being so expensive and coal reserves about five times more plentiful (in ton coal equivalents), wouldn't it make sense for the chemical industry to return to a coal base? Not only could we draw on experience gained since the twenties, but we can make anything out of coal that can be made out of oil or gas, however, at a significantly higher price nowadays.

Among the well-known disadvantages which coal, being a solid, incurs in mining, transportation and processing, the most detrimental from a chemical and energy point of view is its small hydrogen content. All coal conversion processes geared toward chemical application are therefore designed, first of all, to raise the ratio of hydrogen to carbon. Coal has a lower value as a raw material compared to oil and natural gas—these so-called hydrocarbons provide the valuable hydrogen-carbon ratio in ideal form—because it takes about three times more carbon in coal than in oil in order to arrive at the same basic product.

At the present time it is neither sensible nor necessary to abandon the processing advantages of oil in favor of coal.

Political as well as technical efforts should rather be directed toward allocating the valuable hydrocarbons in oil and gas particu-

**We can make anything
out of coal that can be
made out of oil or gas.**

larly for chemical processing and to use other resources to produce energy and heat. Half of the hydrocarbon consumption in West Germany still goes into these two sectors. It is a waste of a valuable raw material which is limited in supply. I am therefore a proponent for expansion of atomic energy.

In this regard Germany is unfortunately still far removed from a comprehensive energy program. The proposed legislation for the third phase of the Federal Republic's energy program could provide a good beginning. It remains to be seen, however, if this bill is to receive more than lip service. Whenever the question of the future of our industrial society arises, there is a tendency to give in too easily to those who think about everything but its future. Until now it has been a case of playing for time, although there is none to waste. It seems as if the energy program is being put off rather than being put into action. Nevertheless, I do not think that the lights will go out in Germany. With utilities intent on raising rates, demand will certainly move in line with the supply. Higher rates will, however, affect particularly those production processes where electricity is a major cost factor, as for instance in the chlor-alkali electrolysis or manufacture of aluminum.

The dispute over the construction and safety of nuclear power plants is only part of current environmental discussions in which we have been engaged since the seventies owing to changed perceptions of the industrial society. This is not a German phenomenon. All nations are more or less affected. However, the attacks are being aimed increasingly at chemicals, science as well as industry. They are cast as the major sources of the problem. Motivated by tactical considerations, politicians tend to give these emotions consideration in their legislation. One example is the new law covering chemicals which the EC Commission designed for implementation in the Community as of 1982. It imposes additional administrative cost burdens on the chemical industry. This law stands as a novelty alone for the fact that it obligates an entire sector of the economy to register its new products prior to market introduction. Germany promptly converted the EC guidelines into national law. If it is administered pragmatically, the chemical industry will be able to live with this law.

Unfortunately, the law covering new chemicals is likely not to be the last administrative hurdle that we will have to surmount. It would be totally wrong to expect that environmental protection would yield its priority to others in face of greater economic difficulties, such as a growing number of bankrupt-

cies or alarming unemployment figures. Environmental protection will continue to be the foremost concern for many, especially if fear continues to be the principal motivator of the industrial society of the eighties.

Having watched the impudence displayed by some sectors of the media in exploiting these concerns commercially, one has to dread that, as in a process of self-induction, society will be driven ever more deeply into this fear.

It is already apparent that the law covering chemicals does not exactly put wings on the chemical industry's innovativeness. In the introductory phases, new products are like delicate seedlings which have to be tended with great care. In having to submit every new substance, regardless of type, to testing in the future, many new products will incur such high cost burdens during their birth pangs that they are likely not to survive.

In my opinion there is no such thing as total product safety. To know everything in advance would inevitably stifle innovation completely. I am puzzled, however, by the schizophrenic attitude displayed by individuals who treat the personal risks like those, for instance, involved in driving a car, far more lightly than the anonymous risks that could be posed by the industrial world, for example, by chemical products.

In light of the tremendous progress we have achieved in production technology, environmental protection and product safety, we can only wish that a more rational, more balanced viewpoint will prevail again. Rebuilding confidence will be one of our major challenges in the eighties, not only in Germany, but for the chemical industries of all countries.

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During the course of the seventies, the costs of raw materials and energy have become increasingly significant in our calculations while the added value in sales, representing that share of processing which benefits from the input of intelligence, continues to become smaller and smaller. In the BASF Group, for instance, the share of added value has been reduced by one-third in the past ten years.

Practically all other chemical companies have been subject to the same experience, none however as much as those heavily



involved, like BASF, in petrochemicals. The severe competition in this sector made it impossible to reflect the higher raw materials and energy costs in prices to the required extent. One reason for this predicament is the worldwide economic slump; another is that during the sixties and seventies new competitors entered the traditional markets of the established chemical companies. The new competition includes the multi-national oil companies and producers in state-controlled economies.

In the eighties the situation will become even more precarious, since the oil producing countries are now using their ample, easily-earned funds to enter the chemical business and to exploit their cost advantage in raw materials. The oil producing countries no longer want to be just exporters of raw materials and importers of finished products, they also intend, by engaging in processing, to create a second source of income so as to be ready for the post-oil era. This industrial build-up, which took decades to achieve in industrial countries, is to be accomplished in a few years there. It is of course easier since the relevant technology and plants can be bought everywhere. The starting conditions are therefore not bad.

As far as can be determined at this time, their products will be marketed largely by experienced partners in joint ventures, thus through internationally active oil and chemical companies.

The disadvantage of higher investment, production and transportation costs will probably be more than compensated by their significant raw material cost advantage. The raw material for these plants will not be naphtha, which we mostly use in Europe, but their own natural gas as well as the huge quantities of petroleum gases that are otherwise merely flared. The flared gas alone would suffice to produce more than several times the world's ammonia requirements.

In addition to refineries, the new plants will principally produce key petrochemical products like ethylene, polyethylene, ethylene glycol and styrene as well as ammonia and methanol. The largest production complexes are currently being constructed in Saudi Arabia and several Gulf states. Similar goals are being pursued by Canada, the North African countries, South America, particularly Mexico, as well as by the North Sea border states, England and Norway.

The first of these plants will come on stream between 1983 and 1986. To picture their dimensions, suffice to say that the new Saudi Arabian ethylene plant alone will be capable of producing about 10 percent of the current total ethylene capacity in Europe.

What consequences will the established chemical industry have to draw from the challenge posed by the oil producing countries in the eighties?

1. Considering all factors, including transportation, it will be increasingly less interesting to produce a number of products with high raw material and energy content far from the raw material source. Using up-to-date processes, raw materials and energy represent, for instance, 90 percent of total methanol production costs in Europe; 80 percent in the case of ammonia and such commodity plastics as PVC and low-density polyethylene. The remaining added value margins provide only limited opportunities to compete with a better process against the advantages of favorable raw material and energy costs. After all, these commodities are no longer sold on the basis of quality or special properties, but only on price.

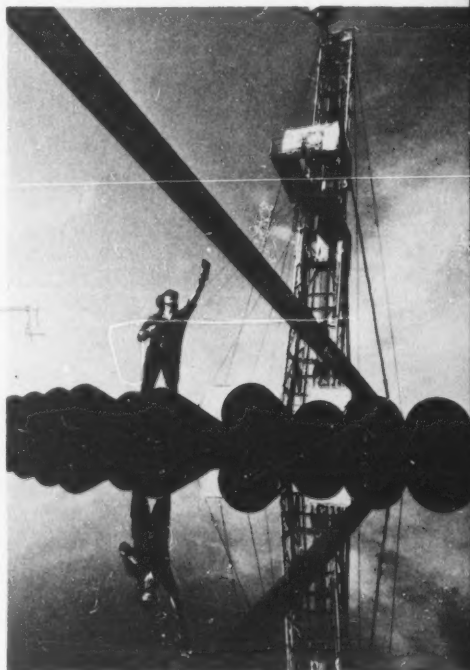
The higher the processing content, the smaller will be the competitive edge of the oil producing countries. Based on current calculations, the standard grades of low-density polyethylene are a borderline case. However, this borderline can be displayed rapidly, because in the meantime raw materials have become instruments of political power and price escalations can therefore not be ruled out.

To what extent individual chemical companies will abandon output of these products at the old manufacturing sites and displace them to the raw material sources or will even buy them only for further processing, is a question of strategy for each company and its assessment of the political risks involved in displacing or purchasing. It would be difficult for me to assume, for example, that BASF, which has a large requirement for methanol at the present time, could abandon its own production altogether—a certain captive base quantity improves the security of supply.

However, it would be worth considering to concentrate on the production of special grades of polyethylene because they require special catalysts, production processes and special knowhow and, therefore, reduce the output of standard qualities merely to the extent required for co-production.

The surplus commodity plastics capacities cannot be brought in line with consumption within a reasonable time span. Reduced consumption, less use of

The oil producing countries no longer want to be just exporters of raw materials.



**The industry still has
enough strength to
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materials in fabrication of plastic products, as well as added quantities originating out of compensation agreements and new plants in Europe and at our front door, make such an attempt impossible.

The European chemicals industry already produces an annual loss of about DM 3 billion on account of surplus commodity plastics capacity. This situation prompted BASF initially to throttle its low-density polyethylene capacities by 200,000 tons or 20 percent in 1981; the reduction represents a balance arising out of the introduction of new technologies and the closing of old plants. We hope that other producers will follow suit. There are indications that they will. The industry still has enough strength to regain its health on its own. In any case one should not call for government assistance, because subsidies and protectionism would only cement the crisis. The dilemma of the European steel industry should serve as sufficient warning.

2. Efforts to make current processing methods even more efficient and to optimize the raw material and energy input, will continue to be intensified. In this respect the development of new catalysts also plays a significant role.

In addition, production residues are being used increasingly to generate energy. At BASF, for example, they furnish already 15 percent of the primary energy input to the power plants in the Ludwigshafen Works.

The recycling of heat recovered from production processes, heat that until now dissipated into the atmosphere or in cooling water, represents another measure. Only today's energy prices have made recycling of waste heat to this extent possible, because many investments required for this purpose have now become viable, even very viable.

The trend to energy savings is evident throughout the economy. In the sixties it was still an accepted rule that each percent rise in the GNP required as much of an increase in energy consumption. In the seventies Germany needed only a mean of 0.54 percent in energy consumption growth for each one percent of GNP expansion. According to a Deutsche Esso study, this trend will continue in the eighties.

3. As a rule, raw material and energy costs represent 30 to 50 percent of the production costs of sophisticated pro-

ducts, such as pharmaceuticals or crop protection agents, vitamins or dyestuffs, to name only a few—and thus do not play such a critical role.

These products derive their high added value content from unique manufacturing processes, often requiring many steps, and from tailor-made physical or biological properties. Some chemical companies concentrate on these areas of business.

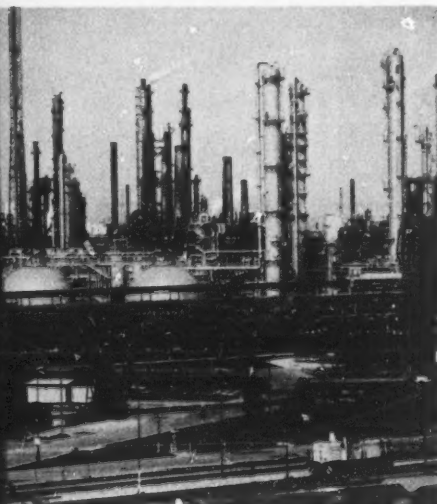
They should therefore be in a position to be relaxed about the emerging restructuring in petrochemicals, if it were not for the pressure on petrochemical companies to integrate forward into innovative, sophisticated products. That, at least, is to be read into many indications. The tectonic shift by producers of chemical commodities will therefore also intensify competition in sophisticated products.

4. However, not only forward integration leads to larger added value margins, but also integration backward into captive raw materials resources.

Such a strategy of vertical integration ranging from raw material to the finished product is exemplified by the merger of DuPont and Conoco, frequently described as a "marriage of elephants." But we at BASF, too, are building up our exploration and production through our Wintershall subsidiary with the aim to increase the share of supplies out of captive resources. It does not make sense, of course, to pursue these activities merely for the purpose of meeting your own requirements. It is just as important to seize the business opportunities presented by the raw materials.

5. Finally, the chemical industry needs to become more active in all world markets in order to exploit, as broadly as possible, the knowhow advantage gained by extensive research. That cannot be accomplished with just a few production sites. If we want to participate in the growth markets of the Third World, we will have to establish plants there in consideration of these countries' efforts to substitute local production for imports. Naturally, the local availability of the required raw materials will play a major role.

To what extent the chemical industry succeeds in converting research projects that are now recognizable only in outline into economically viable technology, will ultimately determine its structure at the end of the eighties. To illustrate, here are two examples



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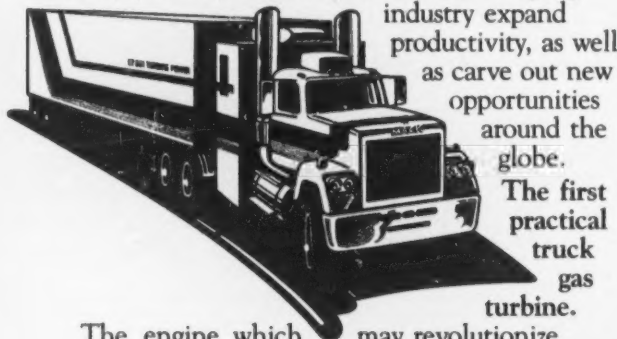
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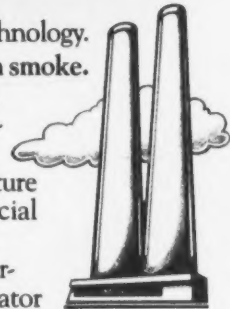
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out of the domain of chemicals and energy.

Until now structural components of surface transportation equipment as well as airplanes, subject to high mechanical stress, could only be produced out of metal. It requires considerable energy to produce metal from ore, whether it be iron, aluminum or titanium, considerably more energy and raw materials than are needed for the manufacture of plastics. By imbedding extremely thin glass, carbon or special polyamide fibers or weaves directionally in resins one can make plastic parts that possess as much stability, rigidity and tenacity as required of comparable metal parts, but are substantially lighter.

These energy savings are not only available in manufacturing the components; substantial fuel savings are also realized over the life span of the vehicle made lighter by these components.

To illustrate: The new Boeing 767, a 200-passenger plane, designed to compete with the European Airbus, will include 3 tons of these new materials and thereby save altogether 1 ton. Even though that is a relatively modest saving in view of the 100 tons the plane weighs overall, it will represent over the life span of the plane a fuel saving of about DM 1,500,000—based on current fuel prices.

If energy prices continue to rise, and undoubtedly they will, and if these components can be built even more efficiently, then these new engineering materials will have a promising future. Boeing expects that the weight of the planes to be built in the nineties will be one-third lighter because up to 65 percent of their weight will represent reinforced plastics.

Now a few words about biotechnology which has gained greater impetus through the fascinating methods of genetic engineering. In spite of the successes realized to date, there is no other area of natural science where hope reigns as supremely for future results. The popular press sees us amidst a revolution in medicine, agriculture, energy and raw material supply, and chemical technology.

Viewed soberly, it is likely that in the eighties only human and veterinary medicine will profit from these new methods out of the borderline between chemistry, biology and medicine. In my opinion, we may see the production of new vaccines or proprioceptive peptide substances which would improve the odds in fighting a number of diseases. Specific alterations of plants, for instance, with genetically implanted resistance against diseases, could change crop protection in the next decades, but it is still far on the horizon.

An obstacle to the wide commercial use of

plants and microorganisms as regenerative raw material sources would be the competition they create for the already existing shortages in food production throughout the world. Genetically manipulated microorganisms which could ferment alcohol directly from cellulose might offer an alternative, but here, too, the realization is still far off. Economic production of raw materials and energy from plants could certainly be realized in the favorable climates of the tropic belt. It would present industrial countries the opportunity to intensify their technology transfer into the developing countries and thereby contribute to the relaxation of North-South tensions.

In the final analysis, biotechnical processes, often described as "soft technologies" because they operate at comparatively low temperatures and pressures and thus require less costly engineering, will prove to be no alternative to large-scale petrochemical processes. On the other hand, they offer relatively simple means for the production of highly complicated substances, for example, antibiotics or vitamins—and since ways are being opened here to sophisticated processing, every chemical company will have to get into biotechnology in the long run.

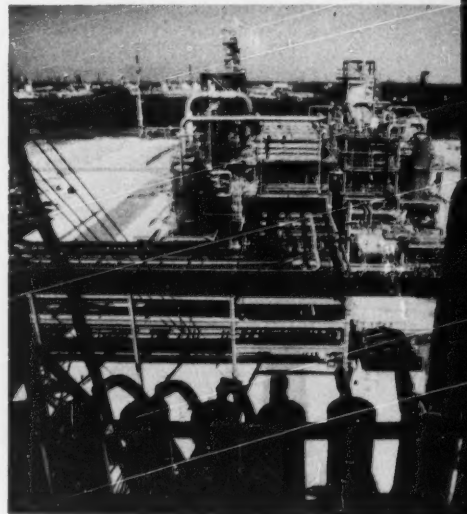
Drastic changes will characterize the eighties and the chemical industry will be challenged on all fronts. However, in this very change lies an opportunity for chemistry. Mankind cannot do without chemistry's capability to convert substances. And the past testifies to chemistry's ability to adapt to such changes and, indeed, it succeeds because of them. That will certainly hold true for the eighties as well.

That is why I continue to be confident about the future of industrial chemistry. It has a powerful research potential at its disposal.

However, the essential inventiveness can only be released there where sufficient latitude for creative initiative and entrepreneurial pioneering is provided. They alone are the pre-requisites for solving existing problems and for coping with those of the future. Governments must grant the necessary latitude and also sufficient patience.

At the outset I pointed out that the rapid economic upswing in the fifties and sixties could hardly have developed without free enterprise and the dismantling of trade barriers. Today we see that more and more states are tempted to resort to controls as a means of mastering their difficulties. Apparently, they failed to learn from past experience.

Increasingly governments want to take the place of management. That is not their job. In the meantime we have come to face a



Drastic changes will characterize the eighties and the chemical industry will be challenged on all fronts.

broad spectrum of administrative measures all over the world. Subsidies keep ailing economic structures artificially alive; tax regulations and price controls are employed from above in an attempt to decree commercial practices and company conduct. If it is claimed subsequently that free market economies are no longer able to cope with the current problems, then it is like wondering why a bird whose wings have been clipped can no longer fly.

Part of free enterprise is free world trade. We need free trade for our raw materials and

energy supply just as much as the worldwide sales of our products. That applies to the Federal Republic of Germany as well as all other industrial nations. National egotisms, as we have also come to recognize increasingly in Europe, may serve to help one or another country short-term, but in the long run, the necessary change is only being postponed. Let us hope that good sense will ultimately prevail because only then can we expect that the eighties will be more successful for the chemical industry than the tough seventies. ■

DEUTSCHE ZUSAMMENFASSUNG

sondere hier in Europa, drueckt, ist offenkundig. Das Geld, das hier in nicht benötigte Anlagen gesteckt wurde, ist so oder so verloren. Dennoch muessen wir heute bereits qualitative und quantitative Vorstellungen von der Zukunft entwickeln, die einigermaßen zuverlaessig sind. Wir brauchen Orientierungsmassstabe, an denen wir die Marschroute ausrichten koennen, denn viele Entscheidungen der Unternehmen kosten viel Geld und wirken weit in die Zukunft hinein.

Aus heutiger Sicht war es ein wesentlicher Faktor für den enormen wirtschaftlichen Aufschwung nach dem Zweiten Weltkrieg, der auch die chemische Industrie erfasste, dass man den bestehenden weltweiten Protektionismus durch internationale Vereinbarungen nach und nach abgebaut hat.

Für die wirtschaftliche Entwicklung Westdeutschlands hat die mutige Entscheidung, die freie Marktwirtschaft gegenüber der überkommenen Planwirtschaft wieder durchzusetzen, eine Schlüsselrolle gehabt.

Als kraeftiges Stimulans wirkte hierbei der kriegsbedingte Nachholbedarf an Wirtschaftsgütern und Verbrauchsgütern. Die leistungsfähige chemische Industrie schaffte es dabei durch die breite Palette ihrer Produkte für zahlreiche nachfragende Industriezweige, dem allgemeinen Wachstum immer einen Schritt voraus zu sein.

Der Einsatz von Flüssigkeiten und Gasen bot Investitionsvorteile gegenüber der Kohle, und das günstigere Verhältnis von Wasserstoff zu Kohlenstoff in den petrochemischen Grundstoffen ersparte im Vergleich zur Kohle Hürden bei den grösstechnischen Synthesen. Auf der Basis der Petrochemie entwickelte die chemische Industrie zahlreiche neue Produkte mit interessanten Einsatzmöglichkeiten zu attraktiven Preisen. Der grosse Siegeszug der Kunststoffe, Kunstharze und Chemiefasern begann, wobei Substitutionsvorgänge bei herkömmlichen Materialien der chemischen Industrie zusätzliche Wachstumsimpulse lieferten.

So nahm der Weltchemie-Umsatz in den

letzten drei Jahrzehnten von 35 Milliarden U.S.-Dollar in 1950 auf 717 Milliarden U.S.-Dollar in 1980 nominal um den Faktor 20 zu, was real in etwa einer Vervielfachung entspricht. Die letzte dieser drei Dekaden unterscheidet sich aber bereits grundsätzlich von den beiden ersten. Hier prägen sich zunehmend die Faktoren aus, die der Wirtschaft heute zu schaffen machen.

Dass die Grenzen des Wachstums aber wirklich erreicht sein könnten, machte uns erst die Ölkrise von 1973/74 bewusst. Die damalige Vervielfachung des Ölpreises, die die Weltwirtschaft zu Beginn einer Phase ohnehin abnehmender Zuwachsraten traf, führte zu einer starken Rezession, die sich auf Grund der handelspolitischen Verflechtungen weltweit synchron fühlbar machte.

Das Preisfieber erfasste darüber hinaus auch andere Rohstoffe, wie Erze, und beim Öl die stark gefragten Einzelfractionen der Raffinerien und deren Folgeprodukte überproportional. Deshalb musste die Chemie in Europa bei ihren wichtigen Rohstoffen Naphtha und Aromaten seit 1978 bis heute Preisanhebungen von über 100 Prozent hinnehmen. Das war kaum mehr aufzufangen.

Diese Schocks sind die eigentliche Ursache für eine Reihe schwerer Malaisen, unter denen nicht nur die Chemie, sondern die Weltwirtschaft insgesamt zu leiden hat.

Hinzu kommt, dass grosse Produktbereiche, die auf der verschwenderisch billigen Energie der fünfziger und sechziger Jahre aufgebaut wurden, sich nun mit den massiven Preiserhöhungen herumzuschlagen haben.

Obwohl 1981 in der Bundesrepublik Deutschland um 16 Prozent weniger Rohöl und Mineralölprodukte importiert worden sind als im Jahr davor, ist die Ölrechnung dennoch um weitere 7 Milliarden DM auf nun gut 72 Milliarden DM angestiegen. Das hatte auch Auswirkungen auf die Leistungsbilanz: Seit der letzten Ölkrise führt die Bundesrepublik Deutschland

Zuverlässige Prognosen zu geben, war aber immer schwer, wenn nicht gar unmöglich. Die Erfahrungen von gestern, projiziert auf die Möglichkeiten von heute, geben eben noch kein Bild von morgen. Das hat auch die chemische Industrie in der Vergangenheit immer wieder feststellen müssen. So wurde in den goldenen fünfziger und sechziger Jahren das Tempo der wirtschaftlichen Entwicklung in der Regel eher unterschätzt. In den siebziger Jahren wurden die Wachstumsraten dann häufig überschätzt, das war doppelt gefährlich, da das sehr schnell in rote Zahlen führen konnte. Die Misere der Überkapazitäten bei den Fasern, den Standardkunststoffen und den Raffinerien und Crackern, die heute viele der Chemieunternehmen, insbe-

auch 1981 mit immer noch knapp 20 Milliarden DM eine lange Schlange von Staaten mit negativer Leistungsbilanz an. Von den Industrienationen koennen lediglich die USA, Grossbritannien und 1981 auch wieder Japan eine positive Leistungsbilanz aufweisen. Alarmierend kritisch wird es aber bei einer Reihe von Entwicklungs-laendern, die kurz vor dem Staatsbankrott stehen.

Doch nun ein paar Fakten zum Thema Rohstoffe und Energie. In der Bundesrepublik Deutschland ist die chemische Industrie der Industriezweig mit dem groessten Bedarf an sogenannter Primaerenergie. Dieser hat einen Anteil von 13 Prozent am gesamten Primaerenergieverbrauch und liegt sogar noch vor der ebenfalls sehr energie-intensiven Stahlindustrie. Von diesen 13 Prozent werden allerdings nur 6 Prozentpunkte fuer rein energetische Zwecke eingesetzt, beispielsweise zum Heizen, Kuehlen, Pumpen, oder auch als Strom fuer elektrochemische Prozesse, zum Beispiel die Erzeugung von Chlor. Der Rest, rund 7 Prozentpunkte, dient als Rohstoff zur Herstellung von Primaerchemikalien. Im Vergleich: Weltweit liegt der Anteil der Primaerchemikalien bei etwa 4 Prozent. Diese Rohstoffe sind nahezu ausschliesslich Mineraloelprodukte und Erdgas. Der Kohle, noch die wesentliche Basis fuer die Chemie bis in die fuenfziger Jahre hinein, kommt heute praktisch nur noch eine untergeordnete Bedeutung als Rohstoff zu.

Von den hinreichend bekannten Nachteilen der Kohle, die sie als Feststoff bei der Foerderung, beim Transport und bei der Verarbeitung hat, wiegt aus chemischer und energetischer Sicht ihr geringer Wasserstoffgehalt am schwersten. Alle Verfahren der Kohleveredelung in Richtung auf Chemieprodukte haben daher zuerst eine Erhoehung des Verhaeltnisses von Wasserstoff zu Kohlenstoff zum Ziel. Die Minderwertigkeit der Kohle als Rohstoff im Vergleich zu Mineraloel oder Erdgas, die als sogenannte Kohlenwasserstoffe das wertvolle Wasserstoff-Kohlenstoff-Verhaeltnis in idealer Form anbieten, diese Minderwertigkeit hat zur Folge, dass etwa dreimal mehr Kohlenstoff in Kohle eingesetzt werden muss als in Oel, um zum gleichen Grundprodukt zu kommen.

Fuer mich steht daher fest, dass es weder sinnvoll noch noetig ist, zum gegenwaertigen Zeitpunkt die verfahrenstechnisch vorteilhafte Basis Mineraloel zugunsten der Kohle zu verlassen.

Die politischen wie die technischen Bemuehungen sollten vielmehr zum Ziel haben, die hochwertigen Kohlenwasserstoffe Oel und Gas insbesondere fuer die Chemie zu reservieren und zur Energie- und Waermegewinnung andere Quellen zu nutzen. Heute geht in der Bundesrepublik

Deutschland immer noch rund die Haelfte des Verbrauchs von Kohlenwasserstoffen in diese beiden Sektoren, und dies ist Verschwendung eines kostbaren Rohstoffs, der nicht unbegrenzt zur Verfuegung steht.

In der Bundesrepublik Deutschland sind wir leider noch weit von einem umfassenden Energiekonzept entfernt, das diese Foerderung beruecksichtigt. Die nun vorliegende dritte Fortschreibung des Energieprogramms der Bundesregierung koennte ein vernuenftiger Ansatz sein.

Der Streit um den Bau und die Sicherheit von Kernkraftwerken ist nur ein Teil der gegenwaertigen intensiven Umweltdiskussion, die wir seit Beginn der siebziger Jahre der veraenderten Bewertung der Industrie-gesellschaft zu verdanken haben. Hier stehen wir in der Bundesrepublik Deutschland nicht allein, alle Industrielaender sind mehr oder weniger davon betroffen.

Im Laufe der siebziger Jahre sind Rohstoffe und Energie zu Kostenblocken mit wachsendem Gewicht in unseren Kalkulationen geworden, und der Anteil der Wertschoepfung am Umsatz, also der durch Intelligenz zu beeinflussende Veredelungsanteil, wurde immer kleiner. So nahm beispielsweise der Anteil der Wertschoepfung bei der BASF-Gruppe in den letzten zehn Jahren um ein Drittel ab.

Die Vermarktung der Produkte, soweit wir das heute feststellen koennen, geschieht zum groessten Teil durch erfahrene Partner im Joint-venture, d.h. durch international taetige Oel- und Chemiefirmen. Der Nachteil der hoeheren Investitions-, Fertigungs- und Transportkosten wird voraussichtlich ueberkompensiert durch den erheblichen Rohstoffkostenvorteil. Denn die Rohstoffbasis dieser Anlagen soll nicht, wie im wesentlichen hier in Europa, Naphta, sondern das eigene Erdgas sowie das in riesigen Mengen nutzlos abgefackelte Erdoelbegleitgas sein. Allein aus dem abgefackelten Gas koennte heute ein Mehrfaches des Ammoniakbedarfs der Welt hergestellt werden.

Der Schwerpunkt der neuen Produktionen liegt neben dem Bau von Raffinerien bei den Schluesselprodukten der Petrochemie, wie Ethylen, Polyethylen, Ethylenglykol und Styrol, sowie bei Ammoniak und Methanol. Die groessten Produktionsanlagen entstehen zur Zeit in Saudi-Arabien und verschiedenen Golfstaaten. Gleiche Ziele werden von Kanada, den nordafrikanischen Laendern, Lateinamerika, hier insbesondere Mexiko, sowie auch den Nordsee-Anrainern England und Norwegen verfolgt.

Die ersten dieser Anlagen werden zwischen 1983 und 1986 in Betrieb gehen. Und um Ihnen eine Groessenvorstellung zu geben: Allein die neuen Ethylenanlagen in Saudi-Arabien entsprechen rund 10 Pro-

zent der gegenwaertigen gesamten Ethylenkapazitaet in Europa.

Welche Konsequenzen hat diese Herausforderung der Erdoelfoerderlaender fuer die etablierte chemische Industrie in den achtziger Jahren?

1. Bei Abwaegung aller Faktoren einschliesslich der Transportmoeglichkeiten wird es zunehmend uninteressant werden, eine Reihe von Produkten mit hohem Rohstoff- und Energieanteil weit entfernt von der Rohstoffquelle selbst herzustellen. Die verbleibenden kleinen Wertschoepfungsspannen bieten nur noch geringe Chancen, gegen den Wettbewerbsvorteil guenstiger Rohstoff- und Energiekosten mit einem besseren Verfahren konkurrieren zu koennen. Bei diesen Standardprodukten ist nicht die Qualitaet oder die besondere Produkteigenschaft das Verkaufsargument, sondern nur noch der Preis.

Die Ueberkapazitaeten bei Standardkunststoffen sind in vernuenftiger Zeit nicht mit dem Verbrauch in Uebereinstimmung zu bringen. Verbrauchsruueckgang und Materialeinsparung sowie zusaetzliche Mengen, die aus Kompensationsvertraegen und aus neuen Anlagen in Europa und vor unserer Tuer stammen, machen dies unmoeglich.

2. Es werden weiterhin verstaerkte Anstrengungen unternommen werden, alle laufenden Verfahren zu rationalisieren und den Rohstoff- und Energieeinsatz zu optimieren. Hierfuer hat auch die Entwicklung neuer Katalysatoren eine wesentliche Bedeutung.
3. Bei hochveredelten Produkten, beispielsweise bei Pharmazeutika oder Pflanzenschutzpraeparaten, bei Vitaminen oder Farbstoffen, um nur einige zu nennen, liegt der Anteil der Rohstoff- und Energiekosten in der Regel zwischen 30 und 50 Prozent der Herstellkosten und spielt daher keine so fatale Rolle mehr.

Sie sollte daher mit Gelassenheit die sich anbahnenden gravierenden Umstrukturierungen in Bereich der Petrochemie betrachten, wenn nicht viele der bedraengten petrochemischen Unternehmen nun ihrerseits eine verstaerkte Vorwaertsintegration in Richtung auf innovative Hochveredelung betreiben wuerden. So zumindest lesen sich viele Ankuendigungen. Die tektonischen Verschiebungen bei den Erzeugern von chemischen Massenprodukten werden daher auch in diesem Bereich den Wettbewerb verschaerfen.

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4. Aber nicht nur die Vorwärtsintegration führt zu einer grösseren Wertschöpfungsspanne, sondern auch die Rückwärtsintegration bis hin zu eigenen Rohstoffquellen.

5. Schliesslich wird sich die chemische Industrie zunehmend auf allen Märkten der Welt betätigen müssen, um den durch teure Forschung erzielten Know-how-Vorsprung möglichst breit zu nutzen. Das wird nicht von wenigen Standorten aus zu bewältigen sein. Wenn wir an den Wachstumsmärkten der Dritten Welt teilhaben wollen, werden wir auch dort Produktionen aufbauen müssen, um den Bemühen dieser Länder, Importe durch Eigenproduktion abzulösen, zu entsprechen. Hierbei wird es natürlich eine grosse Rolle spielen, ob entsprechende Rohstoffe im Land verfügbare sind.

Die Struktur der Chemieunternehmen am Ende der achtziger Jahre wird aber nicht zuletzt auch dadurch geprägt werden, wie es gelingt, Forschungsvorhaben, die heute nur in den Grundzügen erkennbar sind, wirtschaftlich in die Technik umzusetzen. Lassen Sie mich das an zwei Themen aus dem Bereich Chemie und Energie näher beleuchten.

Nun kann man durch das gerichtete Ein-

betten von hauchdünnen Fasern und Geweben aus Glas, Kohlenstoff und speziellem Polyamid in Kunstharze Kunststoffteile erhalten, die die erforderliche Festigkeit, Steifigkeit und Zähigkeit wie vergleichbare Teile aus Metall besitzen, aber dennoch erheblich leichter sind.

Aber nicht nur bei der Herstellung der Bauteile kann Energie gespart werden, auch der Verwender dieser damit gebauten leichteren Fahrzeuge kommt während der gesamten Lebensdauer des Fahrzeugs in den Genuss einer erheblichen Einsparung von Treibstoff.

Lassen Sie mich nun noch etwas zur Biotechnologie sagen, die durch die faszinierende neue Methode der Gentechnologie starke Impulse erhält. Auf keinem anderen Gebiet der Naturwissenschaften ist das Übergewicht der Hoffnung auf zukünftige Ergebnisse im Vergleich zu bisher realisierten Erfolgen grösser.

Der breiten wirtschaftlichen Nutzung von Pflanzen und Mikroorganismen als praktisch regenerierbare Rohstoffquellen steht heute entgegen, dass damit der weltweit ohnehin schon knappen Nahrungsmittelproduktion Konkurrenz gemacht wurde. Eine ökonomische Gewinnung von Rohstoffen und Energie aus Pflanzen dürfte sicherlich in den günstigeren klimatischen Bedingungen des tropischen Gürtels lie-

gen. Für die Industrielande könnte dies eine Möglichkeit zu stärkerem Technologietransfer in die Entwicklungsländer sein und damit ein Beitrag zur Entspannung im Nord-Süd-Verhältnis.

Schliesslich werden biotechnologische Prozesse, die wegen ihrer vergleichsweise niedrigen Verfahrenstemperaturen und Drucke und damit geringerem technologischen Aufwand häufig auch als "sanfte" Technologie bezeichnet werden, auf absehbare Zeit keine Alternative zu den petrochemischen Grossverfahren sein.

Drastische Veränderungen werden das Charakteristikum der achtziger Jahre sein, und die chemische Industrie wird an vielen Fronten gefordert werden. Aber gerade in diesem Wandel sehe ich eine Chance für die Chemie. Die Menschheit kann auf die stoffumwandelnden Leistungen der Chemie nicht verzichten.

Zu Beginn habe ich darauf hingewiesen, dass der rasante wirtschaftliche Aufschwung der fünfziger und sechziger Jahre ohne die freie Marktwirtschaft und die Beseitigung handelspolitischer Hemmnisse kaum möglich gewesen wäre.

Zur freien Marktwirtschaft gehört auch ein freier Welthandel. Wir brauchen ihn für unsere Rohstoff- und Energieversorgung ebenso wie für den weltweiten Absatz unserer Produkte.

American Chemical Industry: Doom or Boom?

As we move toward the end of a century that has seen industrial chemicals grow from infant to adult, one might well ask: Whither the U.S. Chemical Industry? Where lie the challenges? Where rest the opportunities? Are the heady high-growth days that marked the quarter century following World War II over, never to be repeated?

The first and in many ways most serious challenge is to dispel the gloom and doom that have become common coin in many quarters. If you accept the conventional wisdom of the pessimists—the limits-of-growthers—the picture is grim, indeed. These naysayers see limits to growth at every turn. Shortages—of energy, raw materials, capital, land—growing foreign competition, ballooning government regulation, all are conspiring to stunt what historically has been a high-growth industry.

But that's not the way it has to be. Opportunities lie in literally every nook and cranny of our expanding technological base. What the doomsayers seem not to recognize is that the key driving force behind the chemical industry has always been knowledge and its useful application to the needs of society. And knowledge, whether it is applied to producing useful products or solving environmental problems, is inexhaustible. So, too, is the wellspring of our largest knowledge-based industry.

Like all human endeavors, the chemical industry can be viewed in terms of a ledger or score card, with its pluses and minuses. Both sides must be examined. But I think we've

been dwelling too much and too long on the negative. In this article, I'll be focusing on the positive.

Before examining this ledger, let's try to get a fix on our present position. Several years ago, as the decade of the '70s ended, many—myself included—thought we saw a "golden age" of engineering in the offing. But we did not see the sharp and prolonged recession that has engulfed us. In the U.S., we did not see the prolonged pause in two prime chemical markets—housing and automobiles. And we did not foresee the breadth of a recession that has spread to every industrialized country.

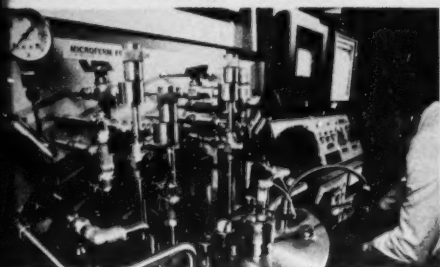
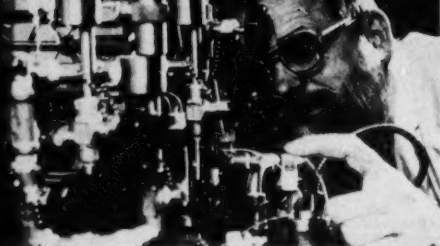
Still, my view is that the "golden age" has been postponed, not cancelled. In the short run—say, the next 2-3 years—we're probably in for a period of slow growth. But in the long term as we move into the second half of this decade, I think we will see the beginnings of that deferred golden age.

Shortages all are conspiring to stunt what historically has been a high-growth industry.

What has happened is that we have more or less used up the technological base that has supported our industrial economy for the past half century, or so. It's a base that was built on the knowledge that was being accumulated in the second half of the 19th century. But we have not fully established the technological base that will support our economy for the coming 50 years or more.



by Patrick P. McCurdy
Director, Technical Communications
Dow Chemical Company



That base will rest on knowledge we have been accumulating during the past two or three decades. Thus, we truly are in the midst of the discontinuity so eloquently described by Peter Drucker in 1968 in his book, "The Age of Discontinuity." We are poised on a plateau. Doomsayers see us about to fall off a cliff, pushed by shortages of energy, raw materials, capital, and technical manpower and by government regulation and foreign competition. Boomsayers, I among them, see us scrambling for the high ground and renewed growth as we develop and capitalize on new technologies.

All those shortages we've read so much about—energy, raw materials, capital—are illusory, at least in a free-market economy. Much conventional energy remains to be tapped. And we have only begun to develop unconventional forms, including fusion, solar and geothermal. Feedstock substitution has been the story of the chemical industry, in its continuing climb up the technology ladder. The predicted shortage of technical manpower in the U.S. may be more real than those other shortages. Even here, though, the amount of attention being centered on this question might well produce yet another glut. And while much government regulation is unneeded, obnoxious and wasteful, we manage to cope, nevertheless. As for foreign competition—we are undoubtedly in the midst of a worldwide shakeout. It will

We have more or less used up the technological base that has supported our industrial economy for the past half century.

separate some men from some boys, as companies seek to shift their product mix, close down unneeded plants, pull out of markets, and so forth. There will be winners and losers, plodders and no-shows, as there always are. But I believe the U.S. chemical industry will more than hold its own as it reaps the

fruits of increased research and development budgets.

Just what sort of "fruits" is this spending buying? I think the key word is "combinations":

- **combinations** of what may have at one time looked like "pure" sciences but which are now turning out to be part of a larger, interacting science matrix...
- **combinations** of materials in the form of laminates and composites and sandwiches in which the "science" of synergism will be developed and refined...
- **combinations** of techniques from quite different disciplines...

Now of course, there is no fundamentally new principle here.

The idea of combinations as a way to conjure up new and different properties has been with us since the Bronze Age and before (if you consider the Stone Age cave paintings in color). Chemistry, after all, is a science devoted to taking things apart and rearranging them. So is cooking.

What is new is the accelerating pace of the game ... our increasing knowledge of how and why things work together and what you have to do to get them to do it ... and our growing perception of the interdependence of this web called science and its appendages, called technology. Let's take a quick look at a sampling of some of these combinations.

In the real world, it is becoming less and less meaningful to speak only of "physics" or "chemistry" or "biology." More and more of the action is occurring at points where these and other sciences and disciplines meet, merge and cross. More and more, it is physical chemistry or chemical physics, biochemistry or chemical biology, and so forth, with a whole family of hybrid technologies.

Such combinations of the sciences are spawning the new technologies that will drive our next wave of industrial and economic growth. At a recent meeting of Dow R&D directors which I was privileged to attend, I was struck at the growing integration and cross-fertilization of various branches and sub-branches of science and technology in some of the new work being done in our laboratories. Pure chemistry is being laced with heavy doses of physics (including electricity, magnetism and light), biology, metallurgy, electronics, information sciences, and on and on. And these matings are leading to new technologies.

There are many examples. But let me mention just one—biotechnology, which likely will remake old industries and create new ones—sooner, but probably later. Biotechnology itself is a hybrid of the very new and the very old. Thus, in less than a decade, genetic engineering has progressed to the

point where its realistic use in agriculture, pharmaceutical manufacture, pollution control, etc., is in the offing. On the other hand, fermentation in one form or another is ages old. Nevertheless, we can probably expect new and rapid developments here, too. Just where genetic engineering—or gene manipulation, as Nobelist David Baltimore prefers—is heading is still an open question. That it is leading us to something important and beneficial is not.

The second major combination is of materials in the form of composites or laminates.

Once again, I must throw out the caveat that the idea of laminations is not new by any means. Consider plywood and coated materials. Reinforced concrete is a composite. Or consider the high art of sword-making, which may have reached its highest form in Japan where craftsmen took a steel billet, cut it, then doubled it—15 times. Now 2^{15} works out to 32,768, which is the number of layers of steel resulting. This layering, or lamination, together with control of other variables, results in an end product combining hardness and flexibility, normally mutually exclusive properties.

Chemists and other scientists and engineers are performing similar feats with combinations of various polymeric materials or combinations of polymers with metals, carbon fiber and other materials to produce end products with unique properties.

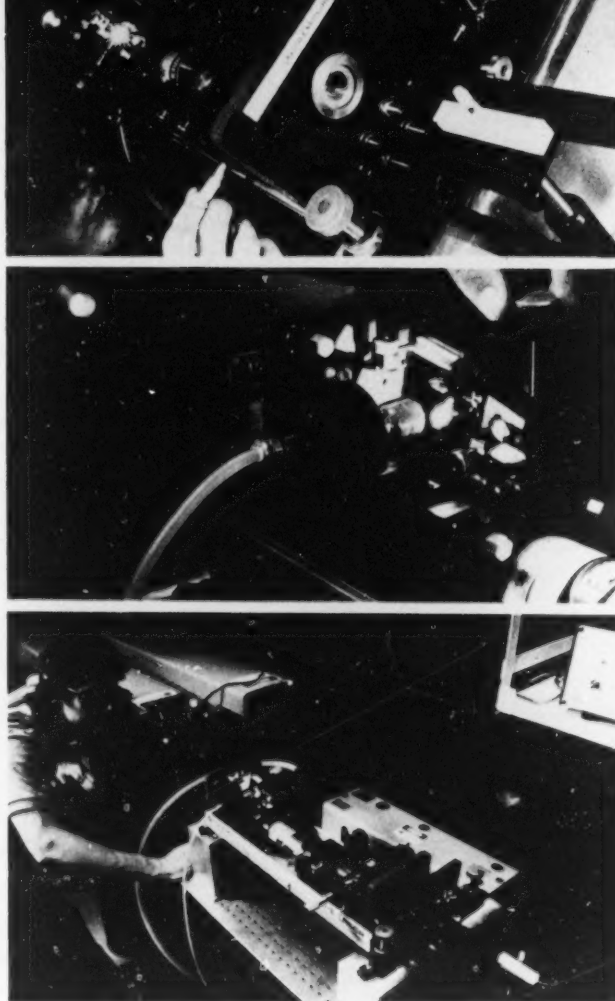
Such developments are leading to such sophisticated end uses as automotive and aircraft parts, where high strength with low weight is critical. They are also leading to use of plastic composites in many of the food and beverage containers now lining supermarket shelves. While this use may seem rather prosaic, the technology involved is no less sophisticated.

Upgrading component materials is what composites are all about ... and the key is technology, much of it chemical.

There's no doubt in my mind that you're going to be hearing a lot more about composites in coming years ... engineering parts ... human body parts, perhaps ... all are candidates.

The big difference between the Japanese sword-maker of old and today's laminator is that the Japanese sword-maker went by rote. He knew what worked, from countless trials. And he was able to meticulously repeat the process. But he didn't know why it worked.

More and more, today, we know why ... because we are working at molecular levels and are beginning to unravel more and more molecular mysteries. This will make us better at making discreet changes at sub-molecular levels. The whole field of catalysis, including enzymatic reactions, will benefit. And this,



in turn, will open whole new areas.

Finally, I mentioned combinations of techniques.

Perhaps, adaptation of techniques to purposes other than that originally conceived would be a better description. The laser comes to mind. In the short span of 20 years or so, it has moved from lab curiosity to geodetic and navigational uses to medical applications to metallurgical purposes and now to chemistry, where it gives a sharp-shooter's rifle to pinpoint reactions and modify molecules at low temperature. The possibilities are obvious.

Such combinations of the sciences are spawning the new technologies that will drive our next wave of industrial and economic growth.

Another example is use of the computer in the laboratory. Chemical researchers are learning how to use computers not only to ease their work but to enhance their work. Thus, computers not only do their traditional labor of compiling and analyzing



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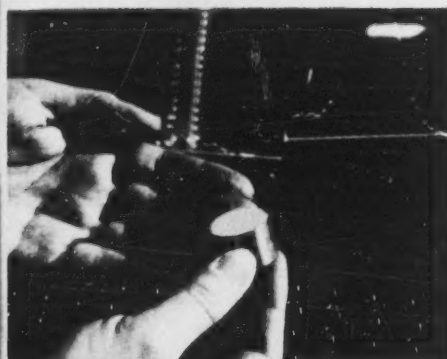
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data, but they are being taught (or will be) to design experiments, run them, analyze them and initiate strategy based on the results.

What will be left for the researcher, with these burdens off his shoulders? Why, of course, he had better climb further up that technology ladder I mentioned previously before some smart computer overtakes him.

Finally, everything I've been saying about combinations is being or will be translated one way or another into new developments in process technology. Expanded use of membranes for separation, perhaps one day eliminating distillation with large savings in energy ... further refinement of fuel cells ... use of polymer membranes in chlor-alkali

technology ... "construction" of interesting new copolymers and polymer alloys ... use of microchips and fiber optics in process control ... the list could go on and on ...

Well, those are a few teasers—hints of developments that will lead the chemical industry to renewed growth. Much will depend on attitude. If we allow ourselves to be dragged down by "Chicken-Little" fantasies conjured up by the so-called Club of Rome, Paul Ehrlich and other like-minded people, then perhaps the outlook is grim. But there is an optimist's bookshelf that counterbalances that kind of thinking. Included are Jakob Bronowski's "Ascent of Man" ... Peter Drucker's "The Age of Discontinuity" ... Bucky Fuller's "Ideas and Integrity" (hard to understand but worth plugging away at) ... Herman Kahn's "The Next 200 Years" and the current "The Coming Boom" ... John Maddox's "The Domsday Syndrome" ... and Julia Simon's "The Ultimate Resource" Interestingly enough, these authors come from quite different backgrounds. Drucker is a management consultant ... Fuller is an architect/engineer/designer/philosopher/whatever ... Kahn is a futurist ... Maddox is a scientist/editor (of Nature) ... Simon is an economist ... Bronowski was a scientist.

Their main messages reinforce each other and underscore the secret behind the success of the chemical industry, which has centered on parlaying knowledge into useful, needed and profitable products and services. In the final analysis, there are no constraints on that line of work.

Pure chemistry is being laced with heavy doses of physics, biology, metallurgy, electronics, and information sciences.

DEUTSCHE ZUSAMMENFASSUNG

Steht die Chemieindustrie in den USA nach einem ungeahnten Aufschwung am Ende ihrer Blütezeit?

Das Bild ist düster, wenn man den Pessimisten und ewigen Neinsagern glaubt.

Betrachtet man das Bild aber realistisch, so stoest man auf unerschöpfliche Möglichkeiten, die sich aus der Kenntnis ueber

naturwissenschaftliche Zusammenhaenge ergeben. Ende der siebziger Jahre glaubten noch viele an ein goldenes technisches Zeitalter. Dieser Glaube ging zwar nicht durch die weltweite wirtschaftliche Rezession verloren, aber das goldene Zeitalter ist vorerst verschoben.

In den vergangenen funfzig Jahren fand die Industrie eine wesentliche Stuetze in neuen technologischen Erkenntnissen und Entwicklungen. Diese technologische Basis wurde bereits in der zweiten Haelfte des 19. Jahrhunderts gelegt und ist jetzt mehr oder weniger erschoept.

Zur Zeit besteht keine vergleichbare Grundlage fuer die folgenden funfzig Jahre; wir koennen aber in begrenztem Umfang auf die Erkenntnisse der vergangenen zwei oder drei Jahrzehnte zurueckgreifen.

So befinden wir uns in der Mitte einer Uebergangsphase, wobei wir uns nicht am Rande eines Abgrundes sehen sollten, in den wir wegen Energie—und Rohstoffmangel stuerzen, sondern wir sollten neue Kraefte sammeln und uns neue Technologien zunutze machen. Wir stehen erst am Anfang der Entwicklung von unkonventionellen

Energieformen wie Kernenergie, Solartechnik und Geothermik.

Der weltweite Wettbewerb wird die Spreu vom Weizen trennen. Die Chemische Industrie der USA wird dabei mehr als nur ihre Position behaupten, da sie die Früchte der erhöhten Ausgaben für Forschung und Entwicklung ernten wird. Das Schlüsselwort für diese Ernte heisst "Kombinationen".

Hierzu gehören interdisziplinäre Zusammenarbeit, verschiedene Materialverbindungen und die Kombination von Techniken unterschiedlicher Fachbereiche.

Die Idee von Kombination jeder Art ist nicht neu. Die Chemie war schon immer die Wissenschaft von Analyse und Synthese. Neu ist das immer schneller werdende Tempo der technologischen Entwicklung.

Ein kurzer Blick auf die verschiedenen Kombinationsmöglichkeiten zeigt, dass es immer weniger zutrifft, nur von Physik, Biologie oder Chemie zu sprechen. Statt dessen haben wir es immer mehr mit Biochemie, chemischer Physik, physikalischer Chemie usw. zu tun. Diese Verflechtungen vermehren sich ständig und bringen neue Technologien hervor, die wiederum das Wachstum von Industrie und Wirtschaft fördern.

Die Biotechnik z.B. wird neue Industrien schaffen, und Erkenntnisse der Gentechnik werden in der Landwirtschaft, der pharma-

zeutischen Industrie usw. eingesetzt werden können. Wo allerdings die Genmanipulation hinführt, bleibt noch offen.

Die zweite Form von Verknüpfungen besteht in verschiedenen Materialverbindungen. Dies ist grundsätzlich nichts Neues. "Sandwiches" gab es immer schon. Man denke nur an Sperrholz und beschichtete Materialien. Stahlbeton z.B. ist ein Gemisch.

Chemiker, andere Wissenschaftler und Ingenieure vollbringen wahre Meisterstücke in der Kombination von verschiedenen polymerischen Materialien oder Polymeren mit Metall, Kohlefasern und anderen Materialien, um Produkte mit einzigartigen Eigenschaften herzustellen.

Entwicklungen auf diesem Gebiet bringen neuartige Stoffe von grosser Stabilität und niedrigem Gewicht hervor, wie sie in der Automobilindustrie und im Flugzeugbau Anwendung finden, aber beispielsweise auch als Verpackung in den Regalen der Supermärkte zu sehen sind. Der Schwerpunkt der Forschung nach neuartigen Stoffkompositionen liegt dabei auf der Verbesserung der Materialqualität. Zweifellos werden wir in Zukunft noch vielen anderen neuen Materialkompositionen begegnen, von technischen Teilen bis hin zur Chiroplastik.

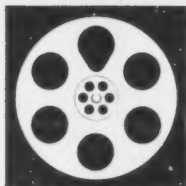
Die Materialforschung hat sich immer mehr auf molekulare Bereiche verlagert.

Das ganze Feld der Katalyse, einschliesslich enzymatischer Reaktionen, wird in Zukunft noch völlig neue Möglichkeiten eröffnen.

Schliesslich gibt es noch Kombinationen verschiedener Anwendungstechniken. Hierunter ist die Übernahme von anderen als ursprünglich vorgesehenen Techniken zu verstehen. Ausgehend von einer Kuriosität im Labor, hat zum Beispiel der Laser in der Navigation, Medizin, Metallurgie und jetzt auch in der Chemie Anwendung gefunden, wo er bei niedrigen Temperaturen Molekülveränderungen bewirken kann. Ebenso hat der Computer seinen Einzug im Labor, wo er nicht nur die Arbeit erleichtert, sondern auch neue Möglichkeiten eröffnet. Schliesslich ermöglicht jede der genannten Arten von Kombinationen neue Entwicklungen in der Verfahrenstechnik. So, kann z.B. erweiterte Anwendung von Membranen zur Abscheidung vielleicht irgendwann einmal Destillationen ersetzen und hierdurch grosse Mengen von Energie sparen.

Diese Beispiele stellen nur die Spitze eines Eisbergs dar, der noch viele Möglichkeiten birgt, die die Chemische Industrie zu neuem Aufschwung führen können. Hierzu ist nicht nur gesunder Optimismus, sondern auch eine intensive Forschung unerlässlich. So werden neue, nützliche und profitable Produkte der Chemischen Industrie entstehen.

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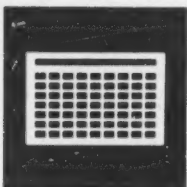


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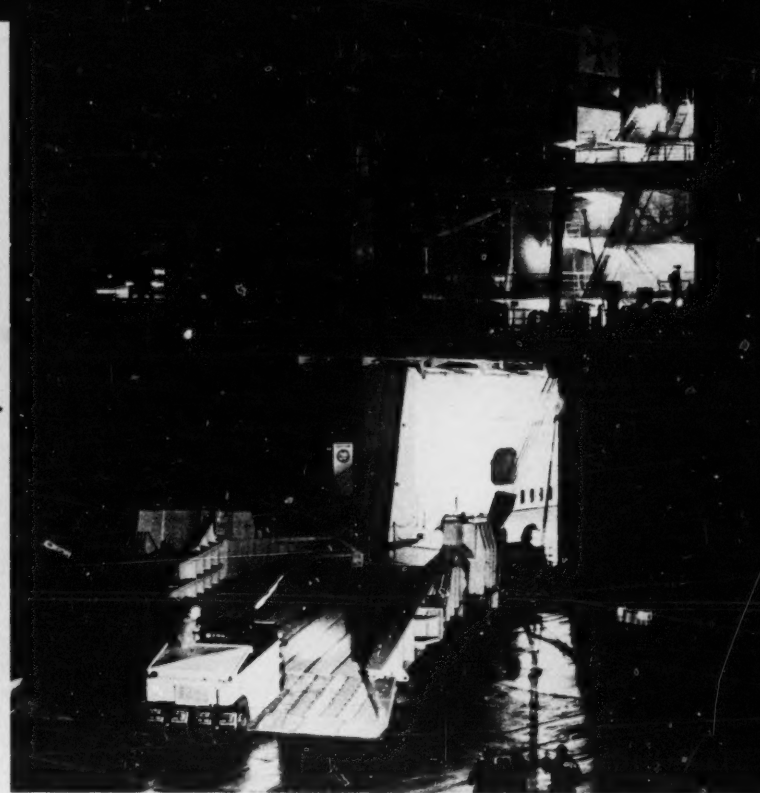
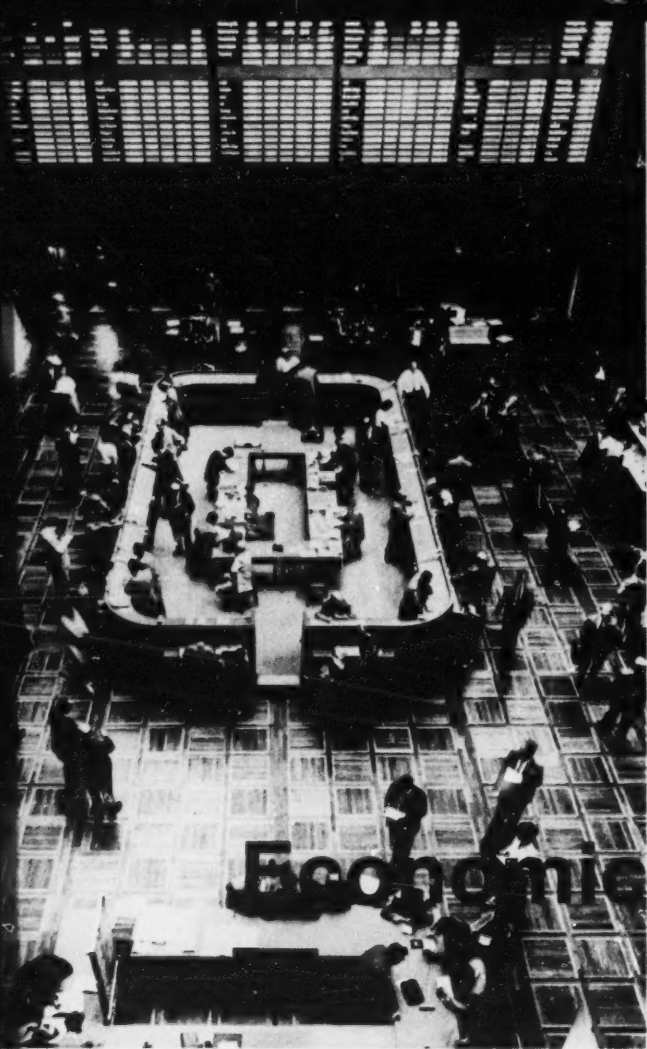
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Economics And Finance



Trends in American Investment in Germany



by Kurt F. Viermetz
Vice President and General Manager
Morgan Guaranty Trust Company
of New York

U.S. direct investments in the Federal Republic in 1981 amounted to DM 406 million, whilst German investments in the United States were recorded at a level of DM 3,403 million, according to the Statistisches Bundesamt and the U.S. Department of Commerce. What do these two figures tell us?

They once again confirm the trend over the last few years that German corporations' direct investments in other countries, particularly in the U.S., have been much larger than that of foreign corporations' direct investments in Germany. The assets of foreign corporations in Germany went up from 1976 to 1979 from DM 63.5 billion to DM 70.3 billion, according to the Deutsche Bundesbank (October 1981 Report) whilst the assets of German corporations abroad went from DM 43.1 billion to DM 60.4 billion during the same period. Before we come to the discussion of the slowdown on foreign direct investments in Germany, or rather specifically that of U.S. corporations in Germany, its causes and reasons, it should be

pointed out that during the same period international capital links worldwide continued to expand very fast. The U.S. Department of Commerce has, for example, pointed out that U.S. investments in foreign enterprises increased by U.S. \$55 billion, or more than one third, between the end of 1976 and the end of 1979. Germany clearly, therefore, has become a less attractive location for U.S. and other foreign corporations during the last 5 years. Why?

The reasons for this trend can be related to the following principal areas:

- (1) A stagnating economy with a declining population.
- (2) Poorer earnings prospects in the German market as a result of high production costs.
- (3) The tendency of the U.S. dollar and the Deutsche Mark in the exchange markets.
- (4) Concern regarding the codetermination law and practices in the Federal Republic.
- (5) Already strong positions in the German and in the European markets by U.S. corporations at a time when European markets do not grow anymore.

First, the German economy has stagnated for more than two years, and the prospects of further stagnation of the German economy in the 80s cannot be excluded. The recent Versailles Summit meeting found the world's economy in a state of difficulty and fragility, reflecting very much the problems the West

Germany has become a less attractive location for U.S. and other foreign corporations during the last 5 years.

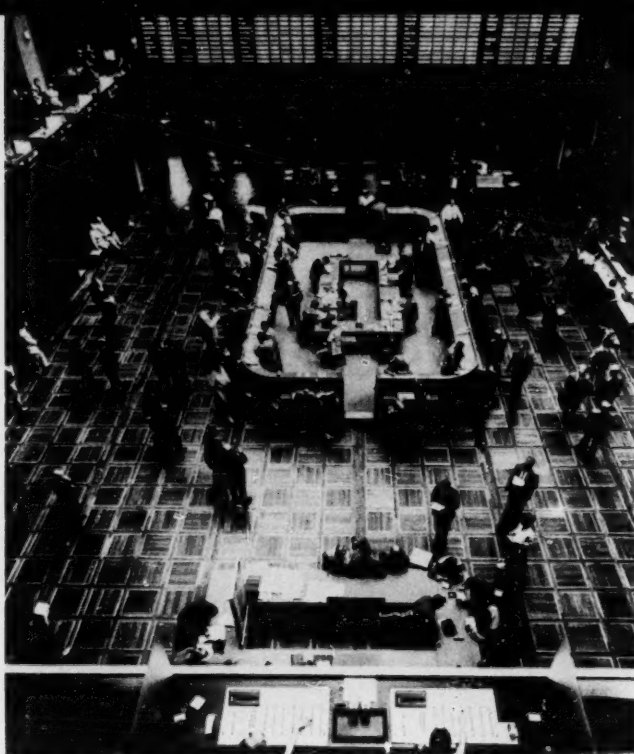
German economy has been battling with. Unemployment in industrial countries stands at a post-war high of 25 million and may rise further: this applies as well to Germany. High interest rates in both nominal and real terms discourage investments, undermine balance sheets of corporations worldwide: this again applies as well to Germany. Worldwide widening deficits of governments and debt problems of developing countries increase the risks of financial disruption. These are surely not environmental factors which will stimulate domestic or international investment.

As far as the German economy is concerned, it had been forced into a painful process of structural changes over the last few years as a result of enormous energy (oil) price increases, and equally important, because of market gains made in the international markets by other competitors. In response, the Deutsche Bundesbank introduced a tight monetary policy in 1981. Under its impact, the Federal Republic has made progress in improving the external position of the country. Export sales have increased sharply, almost spectacularly. This has rescued the Federal Republic from a fully fledged recession in 1981. However, most observers agree that such outstanding export performance is neither permanent—and there are signs that it may be running out of steam—nor is it sufficient to nurse the entire economy back to health. Still, the current account of the Federal Republic, very much in deficit in 1980 and 1981, will most likely show a surplus in 1982. At the same time, progress has also been made in combatting inflation. It provided the basis for an adaptation process in the wage policy area. Wage agreements of slightly more than 4% in the 1982 German wage round will make it possi-

Corporate profits, measured against gross earnings, shrank by 23% in real terms between 1979 and 1981.

ble to cut the rise in unit wage costs, and therefore, will contribute to an improvement in corporate earnings. This is important as corporate profits, measured against gross earnings, shrank by 23% in real terms between 1979 and 1981, whilst wages continued to rise by 2%. The anticipated increase in corporate profits is, however, no more than a first step in the right direction.

In general terms, however, domestic demand has remained very weak, particularly as regards new investments. There are



now also indications that weakening demand from developing and OPEC countries, continued sluggish economic activity in all Western industrialized countries (let alone the increasing problems of the COMECON countries) is beginning to affect foreign orders of German industry. Furthermore, the divergent performance in terms of inflation, trade and external positions and prospects of France, Italy and other smaller EC countries, traditionally the largest trading partners of the Federal Republic, must be troubling to the German industry.

In addition, Germany will have to deal with the Japanese challenge. In short, all conditions of the West German economy point at the very best towards a relatively mild improvement in growth over the next few years.

Secondly, labor costs and productivity in the Federal Republic continue to hamper new investment. Labor costs in the manufacturing industry (hourly earnings plus additional social charges) have run at DM 22 to 23 in 1981, only exceeded by costs in Belgium and Sweden. Of course, productivity does compensate for some of the labor cost problems. But it is a significant indication that German industry is following closely statistics of Japan's longer working hours and lower absenteeism. For instance, sickness and other absence reasons knock 9% off West Germany's working capacity, and only 2% off Japan's. The average Japanese "working year" is nearly 2,100 hours, the average German year around 1,800. Japanese conditions have gained a place in German self-measurement as a point of contrast





to the German progression along the road to economic stagnation. This is in the process of being complemented by developments in the U.S. German industry is following with keen interest the pay bargaining in U.S. industry. Major wage settlements in the U.S. in recent months seem to have broken the pattern of the last decade in which the level of pay and benefits have often seemed to be insensitive to underlying economic trends. The question raised is whether these settlements are a thing of the moment reflecting the current recession in the U.S. or whether there was a more fundamental turning point in industrial relations in the U.S. If so, it could further highlight the precarious position of German industry in regard to its high labor costs.

It seems that U.S. investment may have approached natural limits.

Thirdly, the slowdown of U.S. investment in Germany and vice versa the increased German investments in the U.S. were significantly influenced by the tendency of the two currencies. A strong, and since 1979 over-

valued DM, must have discouraged U.S. investors in Germany, as a depreciation of the DM, rather than further appreciation gains of the currency, was to be expected in the future. Likewise, German investors were encouraged by the low U.S. Dollar rate to step up investments in the U.S. in order to cash in on future appreciation gains to be expected as a market reaction to the currency performance of the Dollar at that time. Judging U.S. and German economic policy today, no fundamental change should take place in the Dollar/DM currency relationship in the foreseeable future.

Fourthly, increased legal regulatory constraints in the Federal Republic are also cited as reasons for lower U.S. investment in Germany. Most observers refer in this connection to the German codetermination law (Mitbestimmungsgesetz) which was entered into force on July 1, 1976. Legislative moves to increase labor codetermination in large enterprises had been anticipated in Germany for many years. In fact, as early as in the early 50s, different systems of codetermination were established for coal mining and the iron and steel producing industry. The Social Democratic/Liberal Coalition government bill introduced new features most foreign countries were not familiar with until then: One was the absolute parity on the Supervisory Board between representatives of the shareholders and representatives of the employees, to be linked, however, with a double vote to the Chairman of the Supervisory Board, who is to be elected by the shareholders representatives; and the other one was the creation of the position of a so-called "Arbeitsdirektor" (works director) throughout industry, in every corporation subject to the codetermination law.

Fifth, with roughly DM 29 billion investments by the U.S. corporations in the Federal Republic in 1979, out of total foreign direct investments in the country of DM 70.3 billion, and with 6 out of the 50 largest German enterprises being wholly-owned by U.S. corporations, it seems that U.S. investment may have approached natural limits. This is confirmed by the fact that the U.S. has lost its traditional top position as largest foreign investor in the Federal Republic to European countries such as the Netherlands, the U.K. and France.

In short, with Germany's economy to remain most likely in an environment of slow growth in the coming years, in view of the geopolitical changes which have taken place in the recent past, and in the light of other constraints mentioned, it is hard to see how the trend to lower investments by U.S. corporations in Germany will be reversed in the foreseeable future. ■

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DEUTSCHE ZUSAMMENFASSUNG

Trends amerikanischer Direktinvestitionen in der Bundesrepublik Deutschland

Ausgehend von den Zahlen des Jahres 1981 fuer die deutsch-amerikanischen Direktinvestitionen - 406 Mio. DM von USA in die Bundesrepublik gegenueber 3.403 Mio. DM in der Gegenrichtung— untersucht der Verfasser die Gruende fuer das relativ bescheidene amerikanische Neuengagement in Deutschland, dessen Schrumpfen nicht in das sonstige Entwicklungsbild der US-Auslandsinvestitionen passt, die von Ende 1976 bis Ende 1979 um ein Drittel, bzw. 55 Mrd. Dollar, zugenommen haben.

Der Autor sieht fuenf Gruende fuer die nachlassende Attraktivitaet der Bundesrepublik als Investitionsstandort fuer US-Gelder:

1. Stagnierende Wirtschaft und negativer Bevoelkerungszuwachs

Die deutsche Wirtschaft stagniert seit zwei Jahren, und eine Fortsetzung dieser Entwicklung weit in die achtziger Jahre hinein kann nicht ausgeschlossen werden. Infolge scharfer Energiepreissteigerungen

und zunehmender internationaler Konkurrenz auf dritten Maerkten, ist die deutsche Wirtschaft einem schmerzvollen Prozess struktureller Anpassungen unterworfen worden. Die Bundesbank reagierte 1981 mit einer Politik des knappen Geldes, die zu Erfolgen bei der aussenwirtschaftlichen Absicherung fuehrte. Die Ausfuehren erhoeheten sich fast spektakulaer. Das bewahrte die Bundesrepublik 1981 vor einer tiefen Rezession. Beobachter sind sich aber darin einig, dass die grossen Ausfuhrerfolge nicht als Dauereinrichtung angesehen werden koennen. Es gibt bereits Anzeichen von Rueckschlaegen. Auch reicht die Ausfuhrseite allein nicht aus, um der gesamten deutschen Wirtschaft zur Gesundung zu verhelfen.

Der Autor uebersieht nicht, dass die deutsche Zahlungsbilanz 1982 wohl wieder einen Ueberschuss zeigen wird. Er uebersieht auch nicht die Erfolge beim Zurueckdraengen der Inflation, die zu Maessigungen in der Lohnpolitik gefuehrt haben. Tarifabschluesse von knapp ueber 4% im Jahr 1982 werden einen Beitrag zur Verbesserung der Gewinnsituation bei den Unternehmen leisten. Dies ist nach Auffassung des Verfassers jedoch auch notwendig, nachdem die Unternehmensgewinne, gemessen an den Bruttoeinnahmen, zwischen 1979 und 1981 um real 23% zurueckgegangen

sind, waehrend die Loehne und Gehaelter weiterhin um 2% gestiegen sind. Die Verbesserung der Gewinnsituation fuer die Unternehmen sieht der Verfasser jedoch nur als ersten Schritt in die richtige Richtung. Generell bleibt es seiner Auffassung nach dabei, dass die Inlandsnachfrage sehr schwach geliebt ist, insbesondere was Neuinvestitionen anbetrifft. Der Verfasser verweist auf die Anzeichen abgeschwaechter Nachfrage aus Entwicklungs- und OPEC-Laendern, die weiterhin schwachen wirtschaftlichen Aktivitaeten in den westlichen Industrielaendern und auch auf die wachsenden wirtschaftlichen Probleme der COMECON-Laender, Schwierigkeiten, die insgesamt am Auftragseingang des Auslandes bei der deutschen Industrie ablesbar werden. Weitere Schwierigkeiten kommen auf die deutsche Industrie von seiten ihrer Hauptkunden, aus Frankreich, Italien und den kleineren EG-Laendern, zu, die bei unterschiedlicher Wirtschaftskraft ebenfalls mit Inflation und Absatzproblemen fertig werden muessen. Hinzu kommt, dass die deutsche Wirtschaft gleichzeitig noch mit der japanischen Herausforderung fertig werden muss. Der Autor fasst zusammen: Alle wirtschaftlichen Bedingungen deuten fuer die Wirtschaft der Bundesrepublik allenfalls auf eine relativ langsame Erholung hin, ueber die naechsten Jahre hinweg.

2. Ungünstige Gewinnaussichten auf dem deutschen Markt als Ergebnis hoher Produktionskosten

Das Verhältnis zwischen Lohnkosten und Produktivität steht Neuinvestitionen in der Bundesrepublik Deutschland entgegen. Lohnkosten im Produktionsbereich (Stundenlöhne plus Sozialabgaben) haben 1981 schon den Stand von 22 bis 23 DM pro Arbeitsstunde erreicht, übertroffen nur noch von den entsprechenden Kosten in Belgien und Schweden. Die Produktivität in deutschen Betrieben bringt hierfür einen gewissen Ausgleich, der angesichts japanischer Zahlen jedoch nicht ausreichend ist. So gehen beispielsweise in der Bundesrepublik 9% der Arbeitskapazität infolge Krankheit und sonstiger Abwesenheit vom Arbeitsplatz verloren, in Japan sind es nur 2%. Das durchschnittliche japanische "Arbeitsjahr" hat etwa 2.100 Stunden, das durchschnittliche deutsche nur 1.800. Der Unterschied zu den japanischen Verhältnissen wird nach Meinung des Verfassers noch unterstrichen durch die Entwicklungen auf dem Lohnsektor in USA. Die dortigen Tarifkämpfe werden von der deutsch-amerikanischen Industrie mit grossem Interesse verfolgt. Grössere Lohnabkommen in den USA scheinen während der letzten Monate die Entwicklung der letzten 10 Jahre zum Stillstand gebracht zu haben, die von immer höheren Löhnen und Nebenleistungen gekennzeichnet war. Sollte sich die US-Entwicklung in Zukunft fortsetzen und nicht nur eine Momentreaktion auf die gegenwärtige Rezession sein, so könnte dies weitere Schwierigkeiten für die schon jetzt prekäre Situation der deutschen Industrie von der Lohnkosten-seite her bedeuten.

3. Die Wechselkursentwicklung und Tendenzen im internationalen Währungsmarkt für US-Dollar und Deutsche Mark

Die Abnahme der amerikanischen Direktinvestitionen in der Bundesrepublik Deutschland und die Zunahme der deutschen Investitionen in USA wurden massgeblich von der Entwicklung des Austauschverhältnisses beider Währungen bestimmt. Eine starke und seit 1979 überbewertete Deutsche Mark hat offensichtlich US-Anleger abgeschreckt. Die Erwartungen hatten sich eher auf eine Abwertung der Mark als auf weitere Aufwertungseffekte gerichtet.

Demgegenüber sahen deutsche Anleger in dem niedrigen Dollarkurs eine günstige Gelegenheit zur Aufstockung ihres US-Engagements, um an der absehbaren Wertberichtigung für den Dollar auf den Währungsmaerkten verdienen zu können.

Beurteilt man die Wirtschaften der USA und der Bundesrepublik heute, so wären nach Meinung des Verfassers auf absehbare Zukunft keine weiteren fundamentalen Währungsverschiebungen im Verhältnis Dollar/DM gerechtfertigt.

4. Die Mitbestimmung in Gesetz und Praxis in der Bundesrepublik

Als weitere Gründe für das Nachlassen der US-Direktinvestitionen in der Bundesrepublik nennt der Verfasser zunehmende gesetzliche und verwaltungsmaessige Einschränkungen. Er verweist in diesem Zusammenhang besonders auf das Mitbestimmungsgesetz vom 1.7.1976 und führt dazu aus, dass gesetzliche Massnahmen zur Erweiterung der Mitbestimmung in Grossunternehmen, über die Regelungen der fünfziger Jahre für Kohle und Stahl hinaus, absehbar waren. Er merkt an, dass

die sozialliberale Regierung Formen der Mitbestimmung eingeführt hat, die bis dahin im Ausland noch unbekannt waren, wie die gleichmaessige Stimmaufteilung zwischen Anteilseignern und Arbeitnehmervertretern im Aufsichtsrat mit der Doppelstimme des Vorsitzenden, der von den Anteilseignern gewählt wird. Als weiteres neues Element führt er die Einrichtung des Arbeitsdirektors in allen Betrieben an, die der Mitbestimmung unterliegen.

5. Etablierte starke Stellung von US-Unternehmen auf deutschen und europäischen Märkten, die kein Wachstum mehr aufweisen

Bei einem Stand der US-Investitionen in der Bundesrepublik 1979 von 29 Mrd. DM, bei 70,3 Mrd. DM auslaendischen Direktinvestitionen insgesamt, sowie angesichts der Tatsache, dass sechs der 50 grössten deutschen Unternehmen ganzheitlich in US-Besitz stehen, scheinen nach Meinung des Autors die US-Investitionen eine natürliche Grenze erreicht zu haben. Als Beweis hierfür sieht er die Tatsache, dass die USA ihre traditionelle Spitzenstellung als auslaendischer Investor in der Bundesrepublik an europäische Länder wie an die Niederlande, Grossbritannien und Frankreich abgetreten haben.

Zusammenfassend meint der Verfasser, es sei schwerlich absehbar, wie sich der Trend zu immer niedrigeren US-Investitionen in der Bundesrepublik angesichts der Lage der deutschen Wirtschaft in einem Umfeld niedrigeren Wachstums, angesichts der geopolitischen Veränderungen, die in der jüngsten Vergangenheit vor sich gegangen sind, und angesichts der dargestellten anderen Beschränkungen in absehbarer Zukunft umkehren soll.

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World Trade and the Service Sector

During the past 25 years, the United States has experienced two dramatic and interrelated revolutions. We have moved from an economy dominated by manufacturing, mining and agriculture, to one dominated by services. At the same time, a revolution in technology has collapsed time and distance and transformed the world into what Marshall McLuhan described as "a global village."

McLuhan's Information Age is no longer fiction but fact. A generation ago, the dominant symbol of economic America was the smokestack. Today, the computer has earned a place beside it. In the United States the economic facts are very clear:

- Domestically, services now constitute 66 percent—two-thirds—of our economic pie.
- More than seven out of every 10 U.S. workers are employed in services.
- Internationally, over the past 10 years, U.S. balance of payments in services has been growing steadily, while the balance for goods has been declining. In 1981, for example, U.S. trade in services was responsible for the first overall surplus since 1976.
- The United States is the world's largest exporter of services. Last year, in fact, its exports—ranging from advertising to insurance to health care—amounted to at least \$60 billion.
- The economic situation in the United States reflects a structural change occurring in other developed countries. In fact, since 1978, the contribution of the service sector to

gross domestic product has become more important than that of the industrial sector for nearly all GATT contracting parties. In Germany, which as of 1978 was the fourth largest exporter of services, services rose from 41 percent of the Gross Domestic Product in 1960 to 49 percent in 1978. This contrasts with a decline in the industrial sector from 53 percent to 48 percent for the same period. In addition, almost half of the German labor force is employed by the service sector, and the number continues to grow.

While services now account for 20 percent of all world trade, the trend towards growth in service trade should accelerate in the 1980s. According to economist Irving Levenson, of the Hudson Institute, we can expect heavily increased international demand for international banking, insurance, securities, data processing and telecommunications services.

And yet we in the U.S. are not acting at

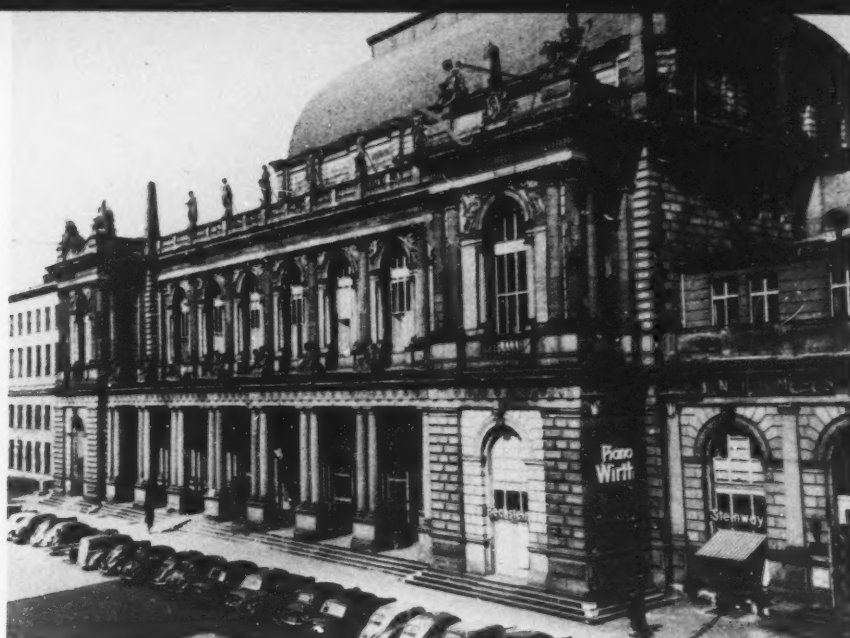
Since 1978, the contribution of the service sector to gross domestic product has become more important than that of the industrial sector for nearly all GATT contracting parties.

present as though we fully understand what services can mean to our domestic economy and our international trade.

Let me focus on the trade side of the picture.



by James D. Robinson III
Chairman and Chief Executive Officer
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But before we can reap those rewards and market freely in the "global village," we must recognize and surmount obstacles posed by international barriers to trade in services.

These barriers—both visible and invisible—are in place and growing. As the world economy undergoes serious strains, they will multiply.

Traditionally, however, U.S. foreign trade policy has been targeted only on one goal: to promote the export of manufactured goods. Today we need to broaden U.S. trade objectives to include barriers that confront exports of services as well.

What are these barriers? They are so numerous and varied that they almost defy classification. But here are a few:

- The U.S. shipping industry encounters discriminatory regulations when seeking the right to transport foreign cargoes. This has been extremely costly to U.S. flag carriers.
- U.S. airlines must compete with subsidized foreign carriers. These airlines have to contend with exorbitant landing fees, less favorable ground handling treatment, discriminatory restrictions on airport use and even denial of access to airline reservation systems.

Traditionally, U.S. foreign trade policy has been targeted only on one goal: to promote the export of manufactured goods.

- In many countries, administrative delays make operating licenses difficult if not

impossible to obtain. Norway has not licensed a foreign insurance firm in the past four decades.

- Several countries impose discriminatory taxes on the importation of U.S. films. Other countries prohibit the establishment of foreign banks or subject them to prohibitive currency and operational restrictions. The list goes on and on.

Another potentially threatening and disruptive barrier is restrictions on transborder dataflows—that is, the flow of electronic information across national borders.

The ability to transmit heavy volumes of information quickly and cheaply by satellite or microwave relay, has become commonplace, and vital, to businesses, domestic and foreign. If, for example, an American Express Cardholder wants to purchase an airline ticket in Hong Kong, our authorization system, located in Phoenix, can approve the purchase in six seconds.

The Organization for Economic Cooperation and Development has found that between 1960 and 1977 the information services share of total trade in services rose annually by 25 percent in Japan, 19 percent in Germany, 16 percent in Canada, 12 percent in France and the U.S. and 11 percent in Britain.

But now, in Europe and elsewhere, efforts are underway to impede the free flow of such flashes of information.

- France, for example, has under discussion a proposal to set a value and impose a duty on imported computer software.
- Canada's new Bank Act mandates data be processed and copies maintained in Canada.
- The Japanese refused an American data-processing company access to leased lines necessary for its business.
- The West German Bundespost has enacted

restrictions that require all users of leased lines to carry out some data processing in Germany, or otherwise transfer all their data traffic to the usage-sensitive public network.

Such measures could dramatically alter the competitiveness of foreign communications-dependent companies that are doing business overseas.

Such barriers are a problem now; they could become a crisis in the future. For example, there are countries which are beginning to regard information as "national property," and are moving to restrict its dissemination. This could become a serious problem for freedom of the press.

Clearly, then, world interest—not just U.S. interest—lies in removing these damaging barriers to free trade in services. The U.S. is not totally free of barriers itself, and any negotiations should be aimed at a regime which takes such barriers into account as well. For, as English economist David Ricardo wrote, "The benefits of trade are shared, and we are all better off if we produce what we can produce most efficiently."

What, exactly, should we be doing?

- First, we need to raise the issue of the benefits of trade in services to higher visibility—both within the U.S. and on an international level. The responsibility lies not only with the press, policymakers and legislators, but with leaders of multinational companies in all forums. Once we have aroused the world to the fact that data, not just Datsuns, are a trade issue, we will have taken a giant step towards recognizing the dimensions of the issue. Once a service sector mentality develops, then industries within that sector—ranging from financial institu-



- Third, we need to pursue serious international trade negotiations aimed at free and fair trade in services. In order to begin this long task, it is important that we build upon

We need to reform international trade legislation to deal with service problems.

tions to engineering firms—will recognize the degree to which they share common problems and concerns. This effort has already been launched through the creation of The Coalition of Service Industries in the U.S., which involves more than 23 corporations drawn from the service sector, and similar groups in Europe and Japan.

- Second, we need to reform international trade legislation to deal with service problems. Existing U.S. trade legislation is incomplete. U.S. trade officials, at present, lack sufficient authority to confront discrimination against U.S. service industries abroad. Important legislation has been introduced in Congress which will give services appropriate parity with manufactured goods in U.S. trade law.

studies now being developed among various trade and sectoral committees of the OECD. In addition, we should seek to extend both GATT principles and process to trade in services, including the areas of telecommunications and information. Application of GATT rules would allow for commitment to the general principle of free trade, and allow an established framework for multilateral negotiations and legal remedies.

A major step in this direction was recently taken at the Gatt Ministerial held in Geneva in late November 1982. Ministers agreed to look ahead, to take a first step towards broadening trade rules to cover services as well as goods. They agreed to examine service issues at a national level and to exchange



information on services through the GATT. The objective is to determine by 1984 whether an international agreement on services is desirable and, if so, how to proceed. While this program is a modest step, its potential significance is profound.

Readjusting international trade policy will not be easy. Achieving a global consensus will not happen overnight. America must take the lead and convince other nations that



barriers to trade in services are barriers to the economic well-being of everyone in our "global village." If we ignore this vital issue when framing tomorrow's economic and trade policies, we will be like generals preparing for yesterday's war. ■

DEUTSCHE ZUSAMMENFASSUNG

Die Wirtschaft der Vereinigten Staaten ist nach Aussage des Verfassers nicht mehr durch industrielle Erzeugung, Bergbau und Landwirtschaft vornehmlich geprägt, sondern durch den Dienstleistungsbereich.

Er begründet seine Aussage wie folgt:

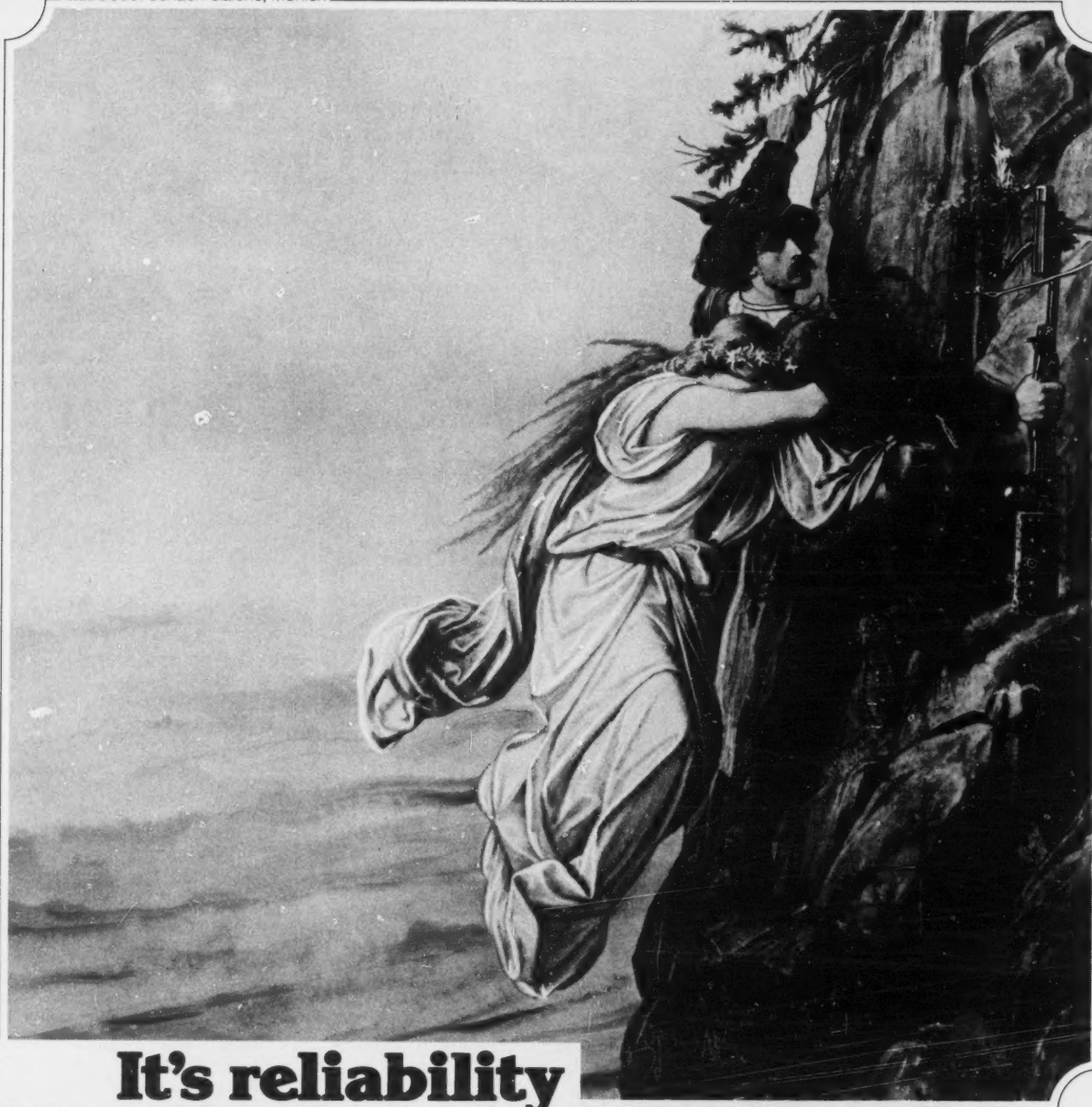
1. 66% der Wirtschaftsleistungen in USA erbringe der Dienstleistungssektor.
2. Mehr als sieben von zehn amerikanischen Arbeitern seien im Dienstleistungsbereich beschäftigt.
3. Der Anteil des Dienstleistungsbe-

reichs an der Zahlungsbilanz der Vereinigten Staaten sei in den vergangenen zehn Jahren beständig gestiegen, während die Handelsbilanz für den Warenverkehr rückläufig war. 1981 sei es dem grenzüberschreitenden Dienstleistungsverkehr zu verdanken gewesen, dass die USA erstmals seit 1976 einen Überschuss in ihrer Zahlungsbilanz erzielen konnten.

4. Die Vereinigten Staaten seien der größte Dienstleistungsexporteur der Welt. Die entsprechenden Exporte, die von der Werbewirtschaft über das Versicherungswesen bis zur Gesundheitsvorsorge reichten, hätten 1981 einen Wert von mindestens 60 Milliarden Dollar gehabt.
5. Die dargestellte Entwicklung in den Vereinigten Staaten, mit ihren strukturellen Änderungen, laufe auch in anderen entwickelten Ländern ab. Für nahezu alle Partnerländer der GATT lasse sich nach Meinung des

Verfassers sagen, dass der Beitrag des Dienstleistungsbereichs zum Brutto-sozialprodukt wichtiger geworden sei, als der Beitrag des industriellen Sektors. In der Bundesrepublik Deutschland habe sich der Beitrag des Dienstleistungsbereichs zum Brutto-sozialprodukt von 41% im Jahre 1960 auf 49% im Jahre 1978 erhöht. Der industrielle Bereich sei im gleichen Zeitraum von 53% auf 48% zurückgegangen. Etwa die Hälfte der deutschen Arbeitnehmerschaft sei im Dienstleistungssektor tätig; die Zahl nehme weiter zu.

Dienstleistungen stellen nach Angabe des Verfassers zur Zeit rd. 20% des Welthandels dar. Der Wachstumstrend in diesem Bereich dürfe sich während der achtziger Jahre beschleunigen. Nach einer Vorhersage des Hudson Institute sei mit einem deutlichen Anstieg bei internationalen Bankgeschäften, Versicherungen, Wertpapiertransaktionen, bei der Datenverarbeitung und bei der Nachrichtenübermittlung, der Tele-



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kommunikation, zu rechnen.

Und dennoch, so meint der Autor, verhielten sich die USA zur Zeit noch immer so, als verstuenden sie nicht, was der Dienstleistungssektor fuer die heimische Wirtschaft und den Aussenhandel wirklich bedeute.

Der Verfasser konzentriert sich sodann auf den Aussenhandel im Dienstleistungsbereich. Hier sieht er die Notwendigkeit, Widerstaende zu erkennen und zu ueberwinden, die sich aus internationalen Hindernissen fuer den freien Dienstleistungsaustausch ergeben. Diese Hindernisse, sowohl sichtbare wie unsichtbare ("visible and invisible"), seien errichtet und wuerden immer hoeher. Der Verfasser befuerchtet, dass sie sich vervielfaeltigen werden, je schwieriger sich die weltwirtschaftliche Situation darstellt.

Die amerikanische Handelspolitik sieht der Autor traditionell auf ein Ziel ausgerichtet, auf die Foerderung des Exports von Industrieprodukten. Heute muessten diese Zielsetzungen seiner Meinung nach ausgeweitet werden. Die Hindernisse fuer den Austausch von Dienstleistungen muessten angegangen werden. Diese Hindernisse nennt der Verfasser so vielfaeltig und unterschiedlich, dass sie sich einer uebersichtlichen Zuordnung nahezu ganz entziehen wuerden. Er nennt einige Beispiele:

1. Die amerikanische Handelsschiffahrt stosse auf diskriminierende Regelungen, wenn sie sich das Recht zum Transport auslaendischer Ladungen sichern wolle.
2. Amerikanische Luftverkehrsgesellschaften muessten mit staatlich unterstuetzten auslaendischen Linien konkurrieren. Ihnen wuerden ueberdurchschnittliche Landegebuehren abverlangt, sie wuerden am Boden weniger bevorzugt behandelt als andere, sie wuerden bei der Flughafenbenutzung im Ausland auf diskriminierende Einschränkungen stossen und ihnen werde dort mitunter sogar der Zugang zu den Reservierungssystemen fuer Luftlinien verwehrt.
3. In vielen Laendern sei es aufgrund administrativer Verzoegerungen schwierig, wenn nicht unmoeglich, Niederlassungsgenehmigungen zu erhalten. Hierzu weist der Verfasser auf Norwegen hin, das waehrend der letzten 40 Jahre keine einzige auslaendische Versicherungsfirma zugelassen habe.
4. Eine Reihe von Laendern belege die Einfuhr von amerikanischen Filmen mit Sondersteuern. Andere Staaten verhinderten die Errichtung von

Auslandsbanken oder wuerden sie prohibitiven Waehrungs- und Taetigkeitsbeschränkungen unterwerfen.

Die Liste geht weiter und weiter, meint der Autor, und nennt ein weiteres Hindernis, das sich seiner Meinung nach bedrohlich und zerstoeuerisch aufzubauen beginnt, naemlich die Beschränkung des grenzueberschreitenden Datenflusses, des Stromes elektronischer Information von Land zu Land. Die Moeglichkeit zur schnellen und billigen Uebertragung grosser Mengen von Informationen ueber Satelliten oder Mikrowellenrelais sei gang und gaebe und auch lebenswichtig fuer die Geschaeftswelt sowohl in den USA wie im Ausland. Der Verfasser verweist in diesem Zusammenhang auf eine Ausarbeitung der OECD, wonach zwischen 1960 und 1977 der Anteil des Handels mit Informationsdienstleistungen am gesamten Dienstleistungsverkehr in Japan jaehrlich um 25% gewachsen sei, in Deutschland um 19%, in Kanada um 16%, in Frankreich um 12% und in USA und Grossbritannien jeweils um 11%. Dennoch seien in Europa und anderswo Bemuehungen im Gange, den freien Fluss solcher Informationsuebertragungen einzuschränken. Frankreich, Kanada, Japan und die Bundesrepublik (Bundespost) werden in diesem Zusammenhang erwahnt. Die entsprechenden Hindernisse stellten zur Zeit ein Problem dar, das sich in der Zukunft zu einer Krise ausweiten koenne, sagt der Verfasser, und betont, dass es Laender gaebe, die im Begriff seien, Informationen zu nationalem Besitz zu erklaren, was nicht zuletzt auch zu einem ernststen Problem fuer die Freiheit der Presse fuehren koenne.

Die USA seien ihrerseits nicht ganz freizusprechen, was Dienstleistungsbarrieren anbetrifft. Es liege jedoch im Weltinteresse nicht nur im Interesse der USA-, die Hemmnisse zu beseitigen, die sich dem freien Handel mit Dienstleistungen in den Weg stellen. Der Verfasser macht drei Vorschlaege, wie das geschehen koennte:

1. National in USA und international muessten die Vorteile des Austausches von Dienstleistungen deutlicher gemacht werden als bisher. Hier seien nicht nur die Presseorgane, die Politiker und die gesetzgebenden Koerperschaften aufgerufen, sondern auch die Fuehrer multinationaler Unternehmen auf allen Bereichen. Sei es einmal in das Bewusstsein eingedrungen, dass nicht nur Datsuns, sondern auch Daten Gegenstand der Handelspolitik sind, werde ein wesentlicher Schritt vorwaerts in Richtung auf das Erkennen der Bedeutung und der Wichtigkeit

des Themas "Handel mit Dienstleistungen" getan sein. Anfangs seien in den Vereinigten Staaten von einer Gruppe, bestehend aus 23 Unternehmen des Dienstleistungssektors, gemacht worden, die unter dem Namen "The Coalition of Service Industries in the U.S." zusammenarbeite. Aehnliche Gruppen gaebe es in Europa und Japan.

2. Die internationale Handelsgesetzgebung muesse im Hinblick auf die Probleme des Dienstleistungsbereichs reformiert werden. Auch die entsprechende US-Gesetzgebung sei unzureichend. Es fehle gegenwaertig den zustaendigen Behoerden die Kompetenz, um gegen Diskriminierungen von amerikanischen Serviceindustrien im Ausland anzugehen. Dem amerikanischen Kongress allerdings laegen Gesetzentwurfe vor, die bei Inkrafttreten dem Dienstleistungssektor die notwendige Gleichstellung mit dem Industriequaterbereich in aussenhandelsrechtlicher Hinsicht bringen wuerden.
3. Die Vereinigten Staaten muessten ernsthafte internationale Handelsvereinbarungen anstreben, die einen freien und fairen Dienstleistungsaustausch gewaehrleisten koennten. Grundlage fuer die Loesung dieser Aufgabe koennten die Studien sein, die derzeit im Rahmen der OECD angefertigt seien. Zusatzlich sollten die GATT-Regeln auf den Dienstleistungsverkehr ausgedehnt werden, einschliesslich der Bereiche Telekommunikation und Information. Eine Anwendung der GATT-Regeln wuerde ein Bekenntnis zum Grundprinzip des freien Handels beinhalten und die Errichtung eines internationalen Rahmens fuer multilaterale Verhandlungen und rechtliche Loesungen ermoeglichen.

Schliesslich weist der Verfasser auf die Bedeutung hin, die die juengste GATT-Runde fuer den Dienstleistungsbereich haben sollte. Jetzt sei die Zeit, so meint er, um ein Arbeitsprogramm zum Thema Dienstleistung auf den Weg zu bringen. Man muesse darauf bestehen, dass der Ueberwindung nationaler Schranken fuer den Dienstleistungsverkehr dieselbe Aufmerksamkeit geschenkt werde, wie den entsprechenden Barrieren fuer den Warenverkehr. Bei all diesen Anstrengungen, so unterstreicht der Verfasser, komme besondere Bedeutung der Verhinderung bzw. Beseitigung von Schranken zu, die dem internationalen Datenstrom entgegenstehen wuerden.

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Accounting in Germany and the United States: a Comparison

*(with special emphasis on the
German view of the U.S. scene)*

For observers of the German-American scene, and particularly for long-term advisors to German business in the United States, there exist substantial differences between the German and American approach to business. This is true even though both nations quickly accommodate to each other, whether we are thinking of U.S. subsidiaries in Germany or of German business interests in the U.S.A. These differences are often highlighted in the areas of finance and accounting.

For German companies crossing the Atlantic to discuss acquisitions of U.S. companies, the initial concerns tend to relate to the market and the products. Only at a later stage are the numbers likely to be put together to show how a takeover or new venture will pay back the capital invested. In other words the German tends to look more for market shares and technical innovation and only later to worry about the financial impact.

His U.S. counterpart in a similar situation will from the outset want to see up to date and audited financial statements for several years and will usually require departmental statements, product costs and in depth financial data. This is likely to shock the German company from whom such information is requested. Just as an acquiring Ger-

man company will be surprised at the readiness with which information is supplied in the U.S.A. but also confused at the way it is drawn up.

The purpose of this article is to highlight and explain some of the differences between accounting in the U.S.A. and Germany with the hope that this will facilitate contacts between businesses in the two countries.

AVAILABILITY OF INFORMATION

It comes as a surprise to would-be U.S. investors in German companies that financial information is often not publicly available. Of the various types of companies and business enterprises active in Germany only AG's (public stock corporations), KGaA's (limited partnerships with quoted share capital) and other enterprises, to the extent that they meet the size criteria of the Publicity Law (Publizitaetsgesetz), are required to publish their annual accounts and have them

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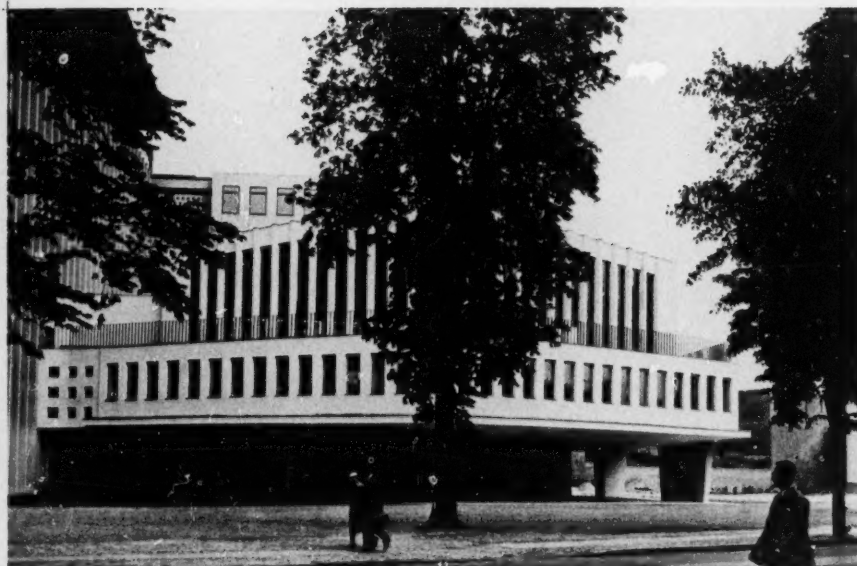
audited. There are also special accounts disclosure requirements for banks, insurance companies and certain publicly owned enterprises but the remainder of German



by Jermyn P. Brooks
Partner, and

Dieter Elsner
Partner, Price Waterhouse

businesses are not governed by the accounting principles of the "Aktiengesetz" (German Companies Act). Some of these enterprises voluntarily disclose financial information (and the majority will be forced to do so when the EEC 4th Directive is taken over into German law).



The above listing leaves the very large number of family businesses of considerable size who now account for a large proportion of acquisitions or new German investment in the U.S.A. They do not disclose financial data to outsiders and would regard such disclosure as damaging to their competitive position and to relations with their labor force. They therefore regard requests by U.S. companies for detailed financial information at an early stage in negotiations with great suspicion and many potential mergers have ended at this stage.

FORMAT OF INFORMATION

Assuming that the German or U.S. investor has received the requested financial statements, many differences become apparent on a superficial reading of the information. The U.S. statements will include a standardized audit report, balance sheet, income statement, statement of changes in financial position (cash flow statement) and possibly a number of other tabular state-

etc. In addition several pages of footnotes will be added which seem confusing to the foreign reader as they do not appear to follow a rigid pattern of disclosure rules.

A German company will normally prepare a printed annual report, if required, or will have available only the auditors' long-form report, if privately held. The annual report contains only a balance sheet and profit and loss account and the auditors' two-line standard report while footnotes style information is included as a special section in the management report. If an auditor's long-form report is at hand, this contains much useful information but the layout will be unusual for the U.S. reader even if he can cope with the language!

German accounting rules covering accounts classification are generally felt in the Anglo-Saxon world to be prescriptive whereas the U.S.A. is deemed to have a more flexible approach governed by the overriding principle that financial statements must fairly present financial position and results of operations.

It is true that the Aktiengesetz contains in sections 151 and 157 a compulsory list of account headings for the balance sheet and profit and loss account. These rules must be rigidly adhered to and the law ignores the concept of materiality. The great advantage of the German system, however, is easy comparability between companies as the financial statements are all presented in identical fashion. This also applies to businesses not required to publish accounts as they invariably prepare balance sheets and profit and loss accounts following the headings of the Aktiengesetz.

By contrast the classification of financial statements in the U.S.A. can be described as a subjective art! The much prized flexibility can become more a hindrance than a help in understanding financial information particularly when presentation is varied from year to year and from one company to another within the same industry. This is one of the most trying aspects for the German reader of U.S. statements who cannot understand the lack of uniform disclosure rules.

Of significance is also the universal practice of U.S. business to prepare consolidated financial statements whereas consolidation in Germany is usually limited to domestic subsidiaries and an overall group consolidation may not be available.

ACCOUNTING PRINCIPLES, GENERALLY ACCEPTED AND OTHERWISE

The differences in financial statement format are obvious even if confusing. Much more dangerous are the hidden differences resulting from the application of different

German accounting rules covering accounts classification are generally felt in the Anglo-Saxon world to be prescriptive.

ments such as five or ten year summaries, movements on stockholders' equity accounts,

accounting principles.

With regard to German valuation rules the Commercial Code and Aktiengesetz provisions are numerous and binding. In practice tax law plays a significant role. Specific rules prohibit the revaluation of fixed assets in financial statements, require goodwill and organization expenses to be written off over five years and allow all intangible assets to be expensed in the year of acquisition if desired. Inventories must be stated at the lowest of cost, replacement price, and net realizable value, and can be stated at lower values to anticipate future losses. As can be seen the tendency is towards conservative valuation. The U.S. approach to valuation rules is to allow specific principles to be evolved by business and the accountancy profession, currently in the form of the Financial Accounting Standards Board. Accounting standards have in recent years dealt with such areas as accounting for leases, inflation accounting and accounting for pension costs. By contrast accounting for leases and pensions is dominated by tax rules in Germany whereas inflation accounting is prohibited, although memorandum disclosure of replacement price information is suggested by the German Institute of Auditors. The latter's recommendations have however no binding force and have, perhaps sadly, still little effect on the development of accounting principles.

Let us take a look at some of the specific problems of U.S. statements from the German viewpoint:

PRUDENCE CONCEPT

The German emphasis on the balance sheet, conservative valuation of assets and concern with full disclosure of liabilities show the importance of the prudence concept. Such was the preoccupation with conservative accounting that the 1965 Aktiengesetz had to make it an offence to deliberately undervalue assets or overstate liabilities. By

Much more dangerous are the hidden differences resulting from the application of different accounting principles.

contrast the U.S. practice of placing emphasis on the income statement and disclosing earnings per share has important consequences. It forces U.S. companies to remain consistent in their application of accounting principles and to seek to follow the matching principle in taking up revenue and the related expense. This in turn results in the capitalization of assets and deferral of

expenses which would be written off in Germany as incurred and leads the German businessman to worry that profits and net worth could be overstated in U.S. financial statements.

IMPACT OF TAXATION

It is a rule of considerable significance in Germany that if a particular accounting treatment is to be claimed for tax purposes then it must be followed in the company's official accounting records and commercial accounts. Many tax concessions, such as accelerated depreciation or the roll-over of capital gains, may only be claimed for tax purposes where charged in the commercial accounts. Such treatment is not only consid-

ered to accord with good accounting principles; valuations which depart from normal commercial principles but which are allowed for tax purposes are specifically permitted by the Aktiengesetz in respect of the depreciation of fixed assets and the amounts attributable to current assets.

The principle that commercial accounts treatment binds a business for tax purposes





leaves no room for the deferred taxes set up in U.S. financial statements. It is not normally possible to pay taxes on lower profits than those shown in the published accounts. The opposite position whereby more charges are taken in the commercial accounts than can be claimed for tax purposes should theoretically lead to a deferred tax debit. This reasoning is however rejected in Germany because the deferral would involve recognition of an unrealized gain. Deferred tax accounting is, with insignificant exceptions, not normal German practice.

It is quite natural therefore that the German businessman will regard deferred tax items appearing in U.S. financial statements as unreal and indicative of an unconservative approach.

Deferred tax accounting is not significant in German accounting for another reason too. All corporate taxes, corporation tax, trade tax on capital and income, net assets tax, property tax, capital transaction tax, etc., are disclosed together in one line in the German profit and loss account. There is no fixation on the determination of profit before income taxes, income taxes and profit after income taxes as in Anglo-Saxon countries. Accordingly, there is no pressing need to adjust these amounts by means of memorandum deferred tax entries in order to

Accounting is seen by the German businessman as a familiar and almost unchanging set of binding rules.

maintain a normal relationship between income taxes and commercial profits. German shareholders are also expressly precluded by law from demanding information in general meetings from their directors as to taxable profits and details of the tax computation!

The influence of tax considerations on commercial accounts and the lack of deferred tax accounting are viewed by many as the major weakness of German account-

ing. "Taxation accounting" can lead to substantial distortion of results from one year to another. It is clear that where tax concessions are to be claimed or the payments of income taxes postponed and kept to a minimum different considerations apply than if purely commercially orientated accounting principles hold sway. The usual feeling about published accounts in Germany that they are too conservative and contain substantial hidden reserves is often merely a result of tax accounting.

U.S. ACCOUNTING PRONOUNCEMENTS

The increasing complexity of U.S. accounting standards, the at times conflicting rules of SEC and IRS, and the rapid rate of modification of previous pronouncements make life hard for the foreigner trying to interpret financial information. Anyone who has tried to explain the new U.S. lease accounting provisions to German businessmen will appreciate the force of this statement! German accounting is seen by the German businessman as a familiar and almost unchanging set of binding rules. Such concepts as retroactive recognition, with restatement, of prior year adjustments contrasted with prospective treatment of changes in accounting estimates leave the German wondering, even under U.S. concepts, what the earnings per share really were. The German rule that all movements except capital changes must be passed through the income statement of the year in which they occur is a simple and effective rule. Only a trained expert who understands accounting concepts in both Germany and the U.S.A. can often explain to the German businessman what has happened from one year to the next in the accounts of a U.S. company.

CONCLUSION

It is perhaps difficult for U.S. accountants to understand that foreign investors should criticize U.S. accounting methods as they relate to financial statement classifications and valuation principles. The state of the art in the U.S.A. is usually regarded as the most sophisticated in the world. However an understanding of German accounting rules should help him appreciate what will be the fears and preoccupations of the German investor reviewing U.S. financial reports. The U.S. observer can certainly benefit from the light handed, more relaxed German approach to financial reporting. The German in turn is forced to relativize the significance of results disclosed under German rules by taking into account tax effects, changes in consistency and the general policy of conservatism. ■

DEUTSCHE ZUSAMMENFASSUNG

Bei Gruendung oder Erwerb von Unternehmen im anderen Lande stehen fuer amerikanische und deutsche Unternehmer oft grundsatzlich verschiedene Zielsetzungen im Vordergrund. Waehrend es vielen deutschen Unternehmern zunaechst wesentlich auf die Entwicklung neuer Maerkte und Technologien ankommt, ist fuer den amerikanischen Investor die Frage nach der voraussichtlichen Verzinsung des investierten Kapitals von Anfang an vorrangig. Dementsprechend misst er Bilanzen und anderen finanziellen Informationen im Hinblick auf Umfang, Aktualitaet, Transparenz und Zuverlaessigkeit oft erheblich groessere Bedeutung bei als sein deutscher Kollege. Vor diesem Hintergrund werden viele der grundsatzlichen Unterschiede in der Rechnungslegung von Unternehmen diesseits und jenseits des Atlantik erklaerlich. Der nebenstehende Artikel versucht, einige der wesentlichen Unterschiede zu erlaeuern und damit zu einem besseren Verstaendnis zwischen Unternehmern beider Laender beizutragen.

VERFUEGBARKEIT VON INFORMATIONEN

Anders als in den USA sind in Deutschland umfassende finanzielle Informationen in der Regel nur dann allgemein verfuegbar, wenn die Veroeffentlichung gesetzlich vorgeschrieben ist, z.B. bei AGs, KGaAs und anderen publizitaetspflichtigen Gesellschaften. Bis zum Inkrafttreten der durch die 4. EG-Richtlinie bedingten Gesetzesaenderungen ist daher davon auszugehen, dass die ueberwiegende Mehrzahl vor allem mittelstaendischer Unternehmen dem Ausenstehenden nach wie vor keinerlei finanzielle Informationen zugaenglich machen wird, um die eigene Stellung im Wettbewerb und die Beziehungen zu den Mitarbeitern nicht unnoetig zu belasten. Entsprechende, in einem fruehen Stadium der Verhandlungen routinemaessig gestellte Fragen amerikanischer Investoren stossen daher zumeist auf erhebliches Misstrauen. Dieser Mangel an gegenseitigem Verstaendnis hat in vielen Faellen zu einem fruehzeitigen Ende derartiger Verhandlungen gefuehrt.

FORMAT DER INFORMATIONEN

Wenn es zur Bereitstellung der gewuenschten Informationen an den deutschen oder amerikanischen Investor kommt, ergeben sich die ersten Verstaendnisschwierigkeiten aus Unterschieden in Form, Umfang und Inhalt der in beiden Laendern

ueblichen Jahresabschluesse und Pruefungsberichte. Der Artikel beschreibt diese Unterschiede im einzelnen und erlaeuert die jeweiligen Vor- und Nachteile. Insbesondere wird deutlich, dass der deutsche Jahresabschluss in der Regel die vereinheitlichenden Gliederungsvorschriften des Aktiengesetzes befolgt und damit zwischenbetriebliche und Periodenvergleiche erleichtert, waehrend das Fehlen einheitlicher Regelungen fuer Form und Gliederung amerikanischer Jahresabschluesse oft die Vergleichbarkeit beeintraehtigt, wenn gleich diese Flexibilitaet im Einzelfalle zu besseren Ergebnissen fuehren kann. Ein weiterer wesentlicher Unterschied wird darin gesehen, dass in den USA die Erstellung konsolidierter Jahresabschluesse allgemein ueblich ist, waehrend in Deutschland zumindest auslaendische Tochtergesellschaften gewaehnlich nicht in den Konzernabschluss miteinbezogen werden.

MATERIELLE UNTERSCHIEDE

Der Artikel wendet sich dann den materiellen Unterschieden zu, die nicht nur bedeutungsvoller, sondern auch schwieriger erkennbar und daher gefaehrlicher sind.

In Deutschland richtet sich die Bewertung nach den Vorschriften des HGB und speziell des Aktiengesetzes, wobei in der Praxis das Steuerrecht eine wesentliche Rolle spielt. An einer Reihe von Beispielen (Verbot der Neubewertung von Anlagevermoegen, schnelle Abschreibung von Goodwill, Gruendungskosten und immateriellen Wirtschaftsgueter, vorsichtige Bestandsbewertung) wird gezeigt, dass hier eine starke Tendenz zur konservativen Rechnungslegung erkennbar ist. Empfehlungen des Instituts der Wirtschaftspruefer haben dabei bisher—wohl bedauerlicherweise—wenig Beachtung gefunden. Demgegenueber werden in den USA Bewertungsregeln von Institutionen der Privatwirtschaft (wie des Financial Accounting Standards Board) formuliert.

Einige der spezifischen Probleme, die sich bei der Lektuere amerikanischer Jahresabschluesse aus deutscher Sicht ergeben, werden im folgenden besprochen.

Das Vorsichtsprinzip: Die Bedeutung dieses Prinzips (Schwergewicht auf der Bilanz, vorsichtige Bewertung von Vermoegensgegenstaenden, vollstaendige Erfassung von Verbindlichkeiten) ist in Deutschland traditionell so gross, dass das Aktiengesetz 1965 willkuerliche Unterbewertungen und Reservebildungen ausdruücklich untersagen musste. In den USA hingegen steht die Erfolgsrechnung und die Ermittlung der wahren "earnings per share" im Vordergrund. Dies erfordert vor allem die periodengerechte Zuordnung von Aufwendungen und Ertraegen bei Waehrung der

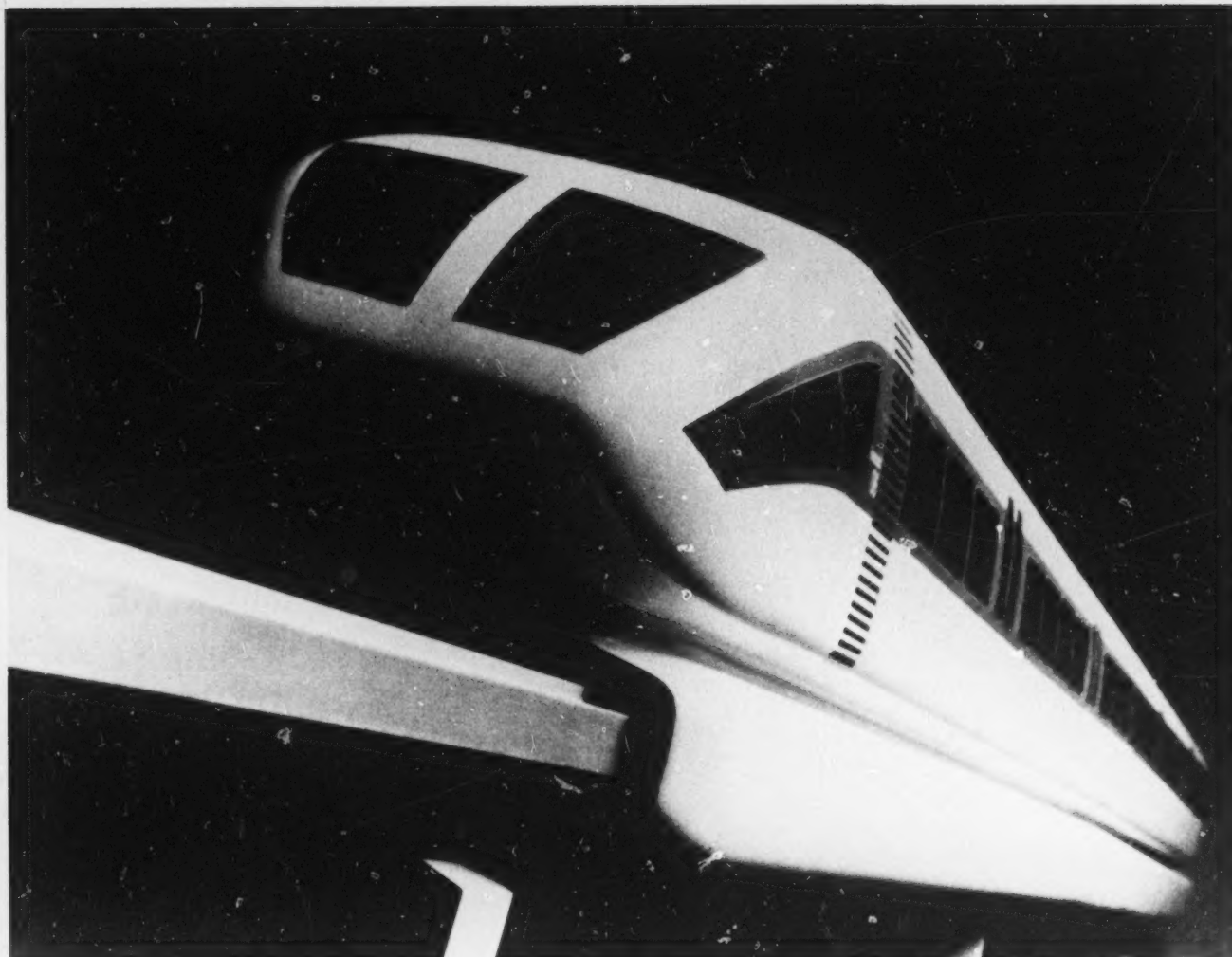
Bewertungskontinuitaet und fuehrt oft zur Bilanzierung von Vermoegensgegenstaenden und Aufwandsabgrenzungen, die der "vorsichtige" deutsche Kaufmann zumindest fuer bedenklich haelt.

Auswirkungen des Steuerrechts: Da in Deutschland steuerlich zulaessige niedrigere Bewertungen (z.B. degressive Abschreibung, §6b EStG, Importwarenschlag) regemaessig einen entsprechenden Ansatz in der Handelsbilanz voraussetzen, gibt es fuer die Beruecksichtigung latenter Steuern normalerweise keinen Grund. Der deutsche Geschaeftsmann betrachtet daher solche Posten im US-Abschluss mit Skepsis. Hinzu kommt, dass aus der deutschen GuV der auf den Jahresueberschuss entfallende Ertragsteueraufwand nicht erkennbar ist, so dass eine "Normalisierung" insoweit nicht fuer erforderlich gehalten wird. Die enge Anlehnung der Handelsbilanz an die Steuerbilanz und die Nichtberuecksichtigung latenter Steuern werden oft als die wesentlichsten Nachteile der deutschen Rechnungslegung angesehen. Der verbreitete Eindruck, dass deutsche Jahresabschluesse zu konservativ sind und in erheblichem Umfang stille Reserven enthalten, erklaert sich oft aus der Inanspruchnahme steuerlich vorteilhafter Bilanzierungswahlrechte.

US-Bilanzierungsrichtlinien: Die zunehmende Komplexitaet, gelegentliche Widersprueche zu SEC und Fiskus und die haeufige Aenderung frueherer Richtlinien machen die Interpretation von US-Abschluesen fuer den Auslaender besonders schwierig. Aenderungen von Abschluesen frueherer Jahre z.B. als Ergebnis der Rueckwirkung neuer oder geaendeter Richtlinien lassen manchen deutschen Leser am Wert der veroeffentlichten "earnings per share" zweifeln. Zumeist kann nur der erfahrene Fachmann, der die Bilanzierungspraxis beider Laender kennt und versteht, dem deutschen Geschaeftsmann die in einem US-Jahresabschluss von Jahr zu Jahr enthaltenen Veraenderungen erlaeuern.

SCHLUSS

Die in den USA entwickelte Uebung der Rechnungslegung wird dortselbst fuer die fortschrittlichste ueberhaupt gehalten, so dass diesbezugliche Kritik auslaendischer Investoren oft auf Unverstaendnis stoess. Dennoch wuerde dem amerikanischen Geschaeftsmann eine gewisse Grundkenntnis deutscher Bilanzierungsregeln das Verstaendnis fuer die Fragen seines deutschen Partners wesentlich erleichtern. Gleiches gilt natuerlich umgekehrt fuer den deutschen Geschaeftsmann, der sich der Grenzen der Aussagefaehigkeit von nach deutschen Rechnungslegungsvorschriften erstellten Abschluesen bewusst sein sollte.



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The International Economic Policy of the United States and Europe

Deep concerns about the future of the Atlantic relationship have become pervasive in both the United States and Western Europe. Differing views of the Soviet threat, and how best to address it, plague the political and security relationship. Stagflation has undermined the economic relationship, producing important splits on both trade and monetary issues. Old habits of consultation and cooperation, which had come to be taken for granted, are being questioned.

The current tensions in economic relations, which are the focus of this article, are due to several factors. Some of these are short run reactions to the marked slowdown in economic growth and some of the domestic policies adopted in both Europe and the United States. Other, more far reaching factors are longer term and structural in nature.

Any discussion of the current stress between the United States and Western Europe must be viewed in the perspective of the present world economic environment. The economic performance of all industrialized countries has been uniformly poor in the recent past. Although there are prospects for some recovery, it does not appear to be robust or long-lasting.

The seven largest countries in the OECD grew at a rate of 1.2 percent in real terms in 1981. This was a sharp drop from the 3.3 average real growth rate during the seven-

ties. In 1982, these seven economies, comprising over 80 percent of OECD income, are expected to show very little economic growth, if any at all. Slower growth has translated into post-depression record levels of unemployment and bankruptcies throughout Europe and the United States. The prospect for even higher rates of unemployment in many of the industrialized countries over the next several years, due to continued slow growth and structural elements which exist in many of the countries, gives little hope for a quick solution to the economic problems which presently confront the industrial economies.

Some of the global recession relates to a convergence of domestic structural conditions in several of the large industrialized countries. Productivity has declined sharply in all major countries since 1973. The most recent round of global recessions, interrupted only by modest recovery, has caused



by Dr. C. Fred Bergsten
Director
Institute for International Economics

Old habits of consultation and cooperation, which had come to be taken for granted, are being questioned.

severe slowdowns in employment growth. Employment in most industrialized countries has not been able to absorb the contin-



uous growth in the labor force. This gap has caused added strain on individual economies, which in turn has placed additional pressure on the already weak global economy. In addition, the longer term impact of the oil shocks of the 1970s are now becoming evident. The required reallocation of resources during that period made it difficult for economies to promote the necessary industrial adjustments in the seventies to meet the demographic and economic challenges of the eighties.

Current U.S. policies appear to have been adopted without regard for their global implications.

New pressures on domestic economies have led policymakers to search for alternative methods to ease the shock of these necessary adjustments. Countries approach this problem from several different starting points. In some cases, the methods employed for adjusting to current economic conditions have actually led to an acceleration of the global recession, without having their intended impact on the domestic economy in which the policies were introduced. In the United States, for example, the loose fiscal policy of the Reagan administration has contributed substantially to the onset of extremely high real interest rates—which have worsened economic performance domestically, impeded the global recovery, and added to the pressures already applied to both industrialized and developing countries. Domestically, these policies have helped produce record levels of unemployment and business failures in the United States, and have reduced the level of economic growth which is necessary to meet the demands of recent demographic trends.

The current recession has also postponed

the adjustments needed to meet the changing trends in the labor market and the industrial sector of the United States. Shortages of capital, due in part to high interest rates, have retarded the industrial growth that is necessary to meet the structural demands of a growing workforce. Instead of devoting resources towards the promotion of new industries and refinement of capital in order to improve productivity, the limited resources available have been diverted to support unemployment and business recovery programs.

Policies in the United States

Current U.S. policies appear to have been adopted without regard for their global implications. The world is becoming increasingly interdependent, as indicated by the increasing role played by exports in domestic production in the United States and other industrial countries over the last decade (see Table 1). The share of exports in the U.S. economy doubled from 5 percent in 1970 to 10 percent in 1980, not far short of the Japanese level. From 1978 through 1980, an improvement in its trade balance accounted for 75 percent of the total growth in US GNP—as American exports grew twice as fast as world trade, belying any notion that

Table 1
Exports of Goods and Services as a
share of GDP in purchaser's value.

	1960	1970	1975	1980
United States	5.1	5.7	8.5	10.1
Japan	10.8	10.8	12.8	14.0
Germany	19.0	21.1	24.8	27.0
France	15.0	16.3	19.5	22.4
United Kingdom	21.3	23.6	26.6	25.2
Italy	14.1	17.8	22.8	29.3
Canada	17.5	23.3	23.3	17.5
Other OECD Countries	25.5	27.8	29.0	33.8
Total OECD	11.6	13.5	17.4	20.2

Source: OECD Historical Statistics, 1960-1980.

the United States has a structural problem (at least in the aggregate) in competing internationally.

This increasing interdependence dictates that policymakers must become more sensitive to the short and long term implications of their domestic economic policies on the world economy. Policymakers must also strengthen their resolve against purely domestic pressures and narrow interest groups which serve to influence policies in disregard of their far reaching global as well as domestic implications.

Recent U.S. policies have helped keep interest rates high. In addition to the impact on capital spending and business solvencies in the United States, high interest rates have been a major factor causing the severe overvaluation of the dollar relative to the underlying economic relationship between the United States and a number of other major countries (including Germany). Since mid-1980 the trade-weighted average of the dollar has appreciated by about 30 percent, while US inflation has only been about equal to inflation in the other major trading countries (and substantially greater than inflation in Germany and Japan). Hence the United States has suffered an enormous loss of international price competitiveness, largely as a result of its own economic policies.

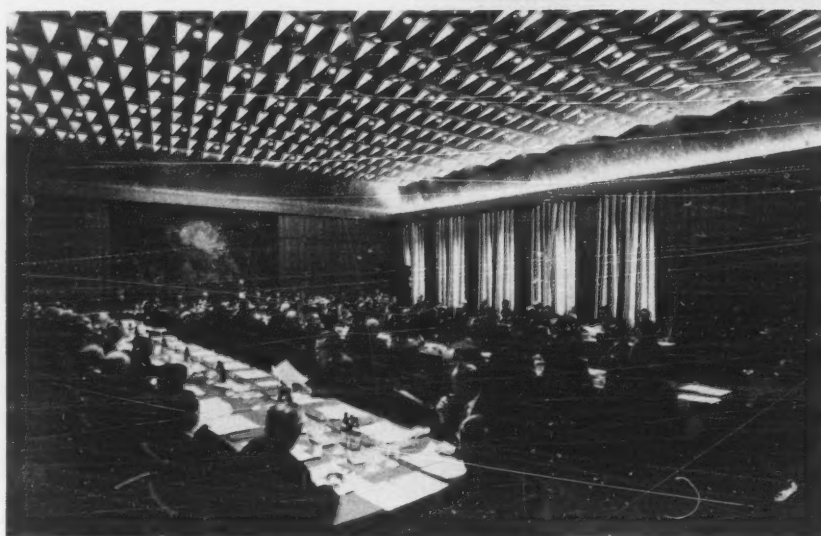
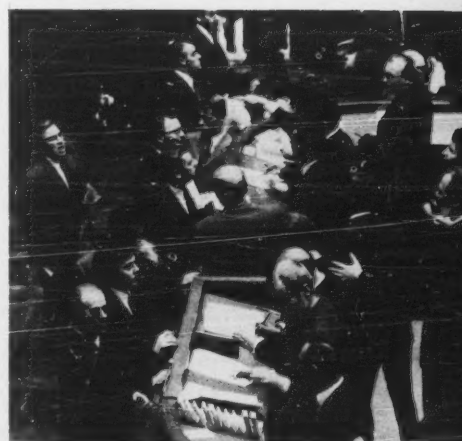
Trade in U.S. manufactured goods has already begun to feel the burden of the severe dollar overvaluation. Net exports, in real 1972 terms, fell by \$8 billion in 1981 and by another \$10 billion during the first three quarters of 1982—despite the domestic recession, which heretofore has always been associated with a sharp improvement in the U.S. trade balance. Exports of manufactured goods in the first half of 1982 dropped by 7.5 percent over the first six months of 1981 and manufactured goods imports rose 7 percent over the same period. The manufactured goods trade balance has experienced a growing deficit since the final quarter of 1981.

The poor performance in trade has retarded the overall growth of the U.S. economy. Indeed, the decline in the trade balance (in real terms) from the first quarter of 1981 through the third quarter of 1982 equalled two-thirds of the total decline in GNP over that period.

The impact of this decline in US trade performance goes well beyond the initial drag on GNP. By some calculations, the decline in manufactured exports and increase in imports of manufactured goods experienced during the first half of 1982 translates into roughly one-half million job opportunities. This strain on employment caused by the recent trend in U.S. manufactured goods trade serves to further accelerate

the domestic recession. The half-million job opportunities associated with the recent downturn in the U.S. trade performance correspond to approximately one-quarter of the increase in the number of unemployed workers since the beginning of 1981.

There are long run implications of this shift in U.S. trade performance. The large employment cost of the recent deterioration, stemming largely from the severe overvaluation of the dollar, has added pressure on policymakers to adopt measures that move away from a liberal trading order. As the world's single largest trading country, the United States must continue to play a leading role in the movement towards freer trade policies. Despite its devotion to market principles, however, the Reagan administration has tightened U.S. import controls in four major sectors: automobiles, textiles and apparel, sugar and steel. These actions were taken at a time when it may have been better to adopt more positive adjustment policies aimed at reducing the costs associated with



the adjustment of factors in order to compete effectively in world markets and enhance the competitiveness of the U.S. economy. The implications of such policy decisions are both long-term and global. Other countries obviously will not modify their trading behavior if the United States continues to adopt short term policies aimed at protecting existing industrial structures.

Trade in U.S. manufactured goods has already begun to feel the burden of the severe dollar overvaluation.

The Challenge for 1983

There is considerable need for policymak-

Other countries will not modify their trading behavior if the United States adopts policies aimed at protecting existing industrial structures.

ers, in all of the major countries, to have a better appreciation for the far reaching global and long term impact of the policies which they implement today. The United States needs to return to a more long-run approach in its policy formulation, working toward internationally agreed goals. In particular, U.S. policymakers must renew their commitment to, and extend their efforts toward, the goals of a freer world trading system by adopting policies designed to enhance U.S. performance in world markets

and reduce domestic protectionist pressure.

The world trading system is at a critical juncture. Countries are studying policies which will enable their economies to meet the new challenges of the coming years. Policymakers must look beyond current political and economic pressures, due to the immediacy of the global recession and misdirected domestic policies, to the achievement of a more open and viable trading system. The movement toward such a system will necessarily lead to even more intensive interaction between countries. As history has already clearly demonstrated, even closer economic and political relations between the United States and Western Europe will certainly be beneficial for all countries involved. At this crossroad, we must recommit ourselves to those policies which will strengthen our economies and relations as they have in the past. ■

DEUTSCHE ZUSAMMENFASSUNG

Die Zukunft des atlantischen Buendnisses hat in Anbetracht der unterschiedlichen Beurteilung der sowjetischen Bedrohung und der wirtschaftlichen Schwierigkeiten im Verhaeltnis zueinander sowohl in den USA als auch in Westeuropa Anlass zur Beunruhigung gegeben.

Die gegenwaertigen wirtschaftlichen Spannungen beruhen auf mehreren Faktoren, die teilweise kurzfristige Reaktionen auf wirtschaftliche und politische Probleme widerspiegeln, teilweise aber auch langfristiger und tiefergreifender Natur sind.

Die zwischen den USA und Westeuropa bestehenden Schwierigkeiten muessen im Licht der heutigen Weltwirtschaftslage gesehen werden, die insgesamt durch schwache volkswirtschaftliche Entwicklungen gekennzeichnet ist und wenig Hoffnung auf eine dauerhafte Erholung begruendet.

Die sieben groesssten OECD-Laender hatten 1981 ein reales Wachstum von lediglich 1,2% zu verzeichnen, im Gegenteil zu 3,3% waehrend der siebziger Jahre, und

fuer 1982 ist keine wesentliche Steigerung zu erwarten. Als Konsequenz dieser Entwicklung haben Arbeitslosigkeit und Konkurse Rekordhoehen erreicht, und es besteht wenig Aussicht, dass sich diese Situation in absehbarer Zeit aendern wird.

In gewissem Umfang ist die weltweite Rezession im Zusammenhang mit mehreren der grossen Industrielaender zu sehen, die sinkende Produktivitaet zu verzeichnen hatten und die auf den Arbeitsmarkt draengenden Kraefte nicht bewaeltigen konnten.

Hinzu kommen die langfristigen Auswirkungen der Oelkrise, die es den Volkswirtschaften schwer machte, sich fuer die bevoelkerungspolitische und wirtschaftliche Herausforderung der achtziger Jahre zu ruesten.

Die Anpassung an die neue Situation wird von den verschiedenen Laendern mit unterschiedlichen Methoden angegangen, die gelegentlich eine Beschleunigung der weltweiten Rezession verursachten, ohne den erwuenschten Erfolg im Inland zu erzielen. Als Beispiel moege die Finanzpolitik der Reagan-Administration dienen, die extrem hohe Zinsen sowie Rekord-

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zahlen von Arbeitslosen und Konkursen nach sich zog, zudem die weltweite Erholung erschwerte und den ohnehin bestehenden Druck auf Industrie- und Entwicklungslaender verstaerkt.

Des weiteren verzogerte die Rezession die erforderliche Anpassung an die Entwicklung des Arbeitsmarktes und der Industrie, da die zur Verfuegung stehenden Mittel statt zur Steigerung der Produktivitaet fuer Programme zur Wiederbelebung der Wirtschaft und zur Bekämpfung der Arbeitslosigkeit verwendet wurden.

Die Wirtschaftspolitik der USA

Gegenwaertig scheinen in den USA politische Entscheidungen ohne Beruecksichtigung ihrer weltweiten Auswirkungen getroffen zu werden. Angesichts der bedeutenden Rolle, die dem Export fuer die Inlandsproduktion in den USA und anderen Industrienationen zukommt, wird deutlich, dass die Volkswirtschaften in steigendem Masse voneinander abhaengig werden.

Aus dieser zunehmenden Verflechtung muessen Lehren bezueglich der kurz- und

langfristigen Konsequenzen der amerikanischen Wirtschaftspolitik auf die Weltwirtschaft gezogen werden.

Die juengste amerikanische Wirtschaftspolitik trug zu den hohen Zinsen bei, die mitursaechlich fuer die folgenschwere Ueberbewertung des Dollars im Verhaeltnis der USA zu einer Anzahl anderer wirtschaftlich bedeutender Laender (einschliesslich der Bundesrepublik) war und die sich in sinkenden Exporten niederschlug.

Die schwache Handelsstaetigkeit wirkte sich insofern nachteilig auf das Gesamtwachstum der amerikanischen Wirtschaft aus, als nicht nur das Bruttosozialprodukt betroffen wurde, sondern auf Grund sinkender Exporte und steigender Importe waehrend des ersten Halbjahres 1982 etwa eine halbe Million Arbeitsplaetze verloren gingen. Bei dieser Sachlage besteht die Gefahr, dass eine liberale Handelspolitik durch staerkere Einflussnahme des Staates unterwandert wird. So hat denn die Reagan-Administration trotz ihres Bekenntnisses zur Marktwirtschaft die Importkontrollen in vier wichtigen Wirtschaftszweigen angezogen (Automobile,

Textilien und Bekleidung, Zucker und Stahl), statt die Konkurrenzfaehigkeit der amerikanischen Wirtschaft zu foerdern.

Wenn die USA durch kurzfristige Loesungen bestehende industrielle Strukturen zu erhalte suchen, sehen andere Laender keine Veranlassung, ihrerseits ihre Handelspolitik zu aendern.

Die Herausforderung fuer 1983

Die Traeger politischer Entscheidungen muessen sich die weitreichenden und langfristigen Konsequenzen heute getroffener Entscheidungen vor Augen fuehren. Insbesondere muessen sie auf ein freieres Welthandelssystem hinarbeiten, indem sie eine Politik verfolgen, die die Leistungsfahigkeit der USA auf dem Weltmarkt steigert und auf Protektionismus verzichtet.

Das Welthandelssystem ist an einem kritischen Punkt angelangt. Es muessen Wege gefunden werden, ein offenes und gesundes Handelssystem zu schaffen, das auf lange Sicht ein fruchtbares und noch intensiveres Zusammenwirken zwischen den USA und Westeuropa gewaehrleisten wird.

"Half of Germany's top 10 banks are Frankfurt-based. We're one of them."

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Why is Frankfurt so important?

"Frankfurt ranks among the world's foremost banking and financial centers. 150 German banking institutions operate here, and Frankfurt has more international banks than any other city in Continental Europe.

The Bundesbank is headquartered here, and the Frankfurt Stock Exchange is Germany's largest, accounting for nearly half of the stock exchange transactions, two-thirds of its dealings in foreign shares and some 80 per cent of the business in foreign fixed-interest securities.

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About the bank itself.

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"With total assets of more than DM 59 billion, Hessische Landesbank is Germany's 10th largest bank, 3rd among Landesbanks. It is a government-backed regional bank with its liabilities guaranteed jointly by the State of Hesse and its Sparkassen and Giro Association. We also act as banker to the State of Hesse from which our name is derived, and perform clearing functions for the 52 local Sparkassen."

What about your service facilities?

"As a German universal bank, our facilities cover the full range of commercial and investment banking services. Internationally, we concentrate on wholesale banking and medium to long-term financing.

Recently we have also significantly expanded our money market operations, drawing on the combined facilities of our London, New York, and Luxembourg dealing rooms.



Moreover, we participate regularly in international bond, note and share issues, and perform brokerage functions for international investors. Our membership of the Frankfurt Stock Exchange facilitates dealing in quoted shares and fixed-interest securities."

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Who are the bank's main clients?

"As a wholesale bank, our service facilities are tailored for large, internationally-active corporations, foreign governments, and financial institutions, as well as subsidiaries of international companies operating in Germany. As bankers to the State of Hesse, we support state-wide and municipal programs, and work closely with Hesse's Sparkassen and their clients, for example on the foreign side."

How do you see your position developing internationally?

"Without neglecting our home base in Frankfurt, we have assembled a team of banking professionals devoted to building a strong international track record based on pragmatic banking principles, the most modern technical and support facilities, and the highest standards of client service. International banking is quite competitive, and banks that try harder for their clients and give them fast, personal service often have the edge. This is one of our major objectives."

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International S.A.
4, Place de Paris
Tel.: (52) 499 4011, Tx: 3295 hela lu

Financial Highlights	DM million	
December 31	1980	1981
Business Volume	57,195	61,980
Balance sheet total	54,427	59,063
Total credit volume	45,542	48,986
Short-term assets	11,806	15,513
Due from banks	7,683	9,200
Due from customers	4,123	6,313
Long-term lending	27,466	27,865
Lending to banks	4,192	4,517
Lending to customers	23,274	23,348
Short-term liabilities	13,447	16,573
Long-term liabilities	7,262	6,626
Bonds issued	22,354	23,747
Capital and reserves	1,151	1,196

Helaba Frankfurt
Hessische Landesbank -Girozentrale-

Industrial Democracy: A Third Way

All human societies from the apes onward have depended on the feeling among members that they belong to something, are part of a community, and that they understand what they are doing. This has become increasingly difficult today because of the size of our society's organization. Excessive size increases power but not necessarily efficiency, and it certainly does not increase emotional satisfaction. The situation is further complicated by the fact that Western civilization suffers from an overestimation of material satisfaction and a dangerous underestimation of emotional satisfaction—the fundamental need of every human being. In the present climate of anonymity, these needs are not met in many organizations and in many countries. The result is restlessness, even instability among social relationships.

At Rosenthal we practice a "third way," a middle course between unlimited capitalism and bureaucratic communism—participation by employees in "say-so" (co-determination) and "having" (capital-sharing).

At the time the question of co-determination first confronted Rosenthal AG, I was president and chief executive officer, and like others in similar positions, I opposed it for a long time. My reasons were the same as theirs—it would obstruct or at least delay critical management decisions and bring politics into the board room. I was under the impression that it would no longer be possible to manage clearly and decisively because management would have to get approval for

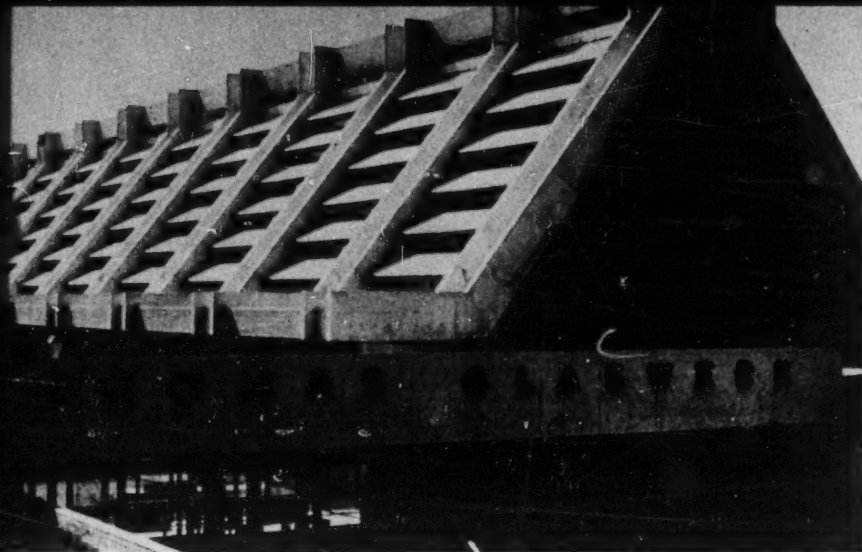
everything. But this turned out not to be the case. Representation by the workers on the Supervisory Board in no way impedes decision-making. In fact, the Supervisory Board does not manage. Its function is to deal with major investments and the hiring and firing of senior management. But co-determination does require management to lead and plan rather than order people around. It became harder for me to put something across than before because I had to explain it. But I discovered that in explaining it, I made corrections. Voltaire used to read everything he wrote to his cook and to rewrite anything she could not understand. It seems to me there is a lesson here for all participants in industrial democracy, and especially for management.

Stable industrial democracy depends on effective communication among all the parties involved. There must be a common understanding of the objectives being pursued. Success depends upon communication and a will to make the system work. The German co-determination model has established a structure which supports effective communication. It encompasses such communication forums as workers' and company councils and a two-tier board which gives all participants a voice in setting policy. Management has learned that effective communication is not a question of giving orders. At the same time, workers and trade unions have learned that it is more than making demands. Communication is a process of



by Philipp Rosenthal
Chairman, Rosenthal AG

Excessive size increases power but not necessarily efficiency.



give and take, of wanting to understand the interests and points of view of other participants in the system. When it is effective, there is no place for confrontation.

At Rosenthal we did not pioneer co-determination, though we did comply with the law willingly at the outset and then moved somewhat ahead of it. But we have been pioneers in the area of co-ownership, or capital-sharing. Our reasons have been both idealistic and practical. Idealistically, co-ownership is demanded by social justice. Practically, it leads to a far more complete joint understanding between management and workers. Practically, it has also become economic necessity.

Our company came to the conclusion that concentration of ownership through banks or concentration in very few hands is one basis for losing contact between top owners/policy-makers and both management and workers. We also concluded that concentration of ownership worked against investment. If only a few people are interested in long-term investment, who is going to do it? I might also add that doing away with private property does not work at all

Co-ownership is demanded by social justice. Practically, it has also become economic necessity.

either. There is no communication in nationalized industry, as, for example, in England, Eastern Germany or Russia. The ordinary man does not feel it is his company. It is as anonymous as concentrated ownership in a capitalistic system.

To look at the economic necessity for joint ownership, consider the example of a company with sales of DM 10 million, costs of DM 9 million and a gross profit of DM 1 million. This company has four alternatives:

1. Invest the DM 1 million in new plant and machinery, and perhaps even in humanizing the work environment, giving little or nothing to employees for increased wages. This is unfair. It is also unrealistic because it is unacceptable to the trade unions. The investment in the future will belong to the owners, not the employees.
2. Give the gross profits virtually completely to employees to increase wages at the expense of investment, expansion or rationalization. But this is to fall backwards, as the British have done. Inevitably, it leads to reduced competitiveness and, ultimately, to unemployment.
3. A third way is again to use virtually all the DM 1 million to increase wages but then to fund new investment by increasing prices. This is the most common compromise, a short term easy way out. But it cheats the workers because the wage increase which goes into a price increase, is, in fact, no increase. Ultimately, the result is inflation and complaints from employees that their wage increases are worthless.
4. So the only economic way is the fourth: participation. You must accept the fact that investments are necessary to safeguard the future and that employees must, at the same time, be permitted to participate in the long-term growth and wealth that results from these investments. So, instead of the untenable situation of capital ownership concentrated in a few hands, the company invites participation by workers in its capital.

It was our realization of these facts that led Rosenthal to introduce co-ownership in 1963. At that time the company made a practice of distributing a profit-sharing cash bonus at the end of each year. We agreed, after discussion with workers' council, to replace this with a long-term savings program through co-ownership. As a first step, the company gave each employee one Rosenthal share, valued at approximately DM 420. In 1967, every employee who had been with the company for more than five years received DM 156 to assist in his purchase of additional company shares. In this way we were able to encourage capital formation among younger employees.

Additional incentives were provided for employees to invest in 1968 and 1970, when employees were given the option of acquiring shares in mutual funds instead of Rosenthal stock. The investment certificates in mutual funds represent diversification of investment and avoid the concentration of risk for employees. Company subsidies ranging from 10% to 20% were used to encourage additional purchases of stock and mutual

fund certificates from 1971 to 1973, the percentage of the company subsidy depending on the number of shares or certificates purchased.

Today, 90% of Rosenthal's German employees own stock in the company, and employees as a group own 10% of the company. Since no single shareholder is allowed to own more than 5%, employees thus represent the largest single block of shareholders. The average holding is \$1,700.



Each employee is permitted up to a maximum of \$530 in stock or investment certificates each year. The employee contributes one-third, or \$177. The remaining two-thirds is contributed jointly by Rosenthal and by government-funded "savings premiums," allowances the German Government offers to wage-earners below a certain level of income for savings.

Ownership vests immediately upon purchase, and employees are free to sell their shares on the stock market—as some have done when they retired or left the company—subject only to the German law requiring that they hold shares for six years in a special deposit account.

The financial part is however only one side of the coin. The other is participation by employees in management decisions. Employee shareholders are of course free to participate in discussions at the annual meeting. To make their participation meaningful, the company encourages them to organize and to send approximately 50 representatives to the meeting. Integral to this process is our communication effort. The company's senior management meets with employee groups to discuss the role and responsibilities

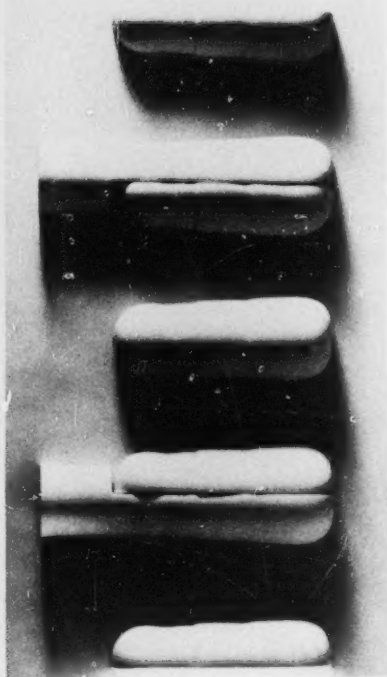
of shareholders and to answer questions about company operations. These special briefings before each annual meeting allows employee shareholder representatives to be fully informed.

The benefits of worker participation on these two levels—"say-so" and "having"—have been extremely positive. Among the ways in which this has been demonstrated are the following:

1. Perhaps most important are our continuing gains in productivity. Productivity increased an average of 12% a year from 1974 to 1979 and at 7% a year in 1980 and 1981. Yes, the expensive plant modernization program on which we embarked in 1959 was essential to this, but without employee cooperation the modernization program could not have been successful.
2. Our market share has increased from 12.9% to 19.6% in fine porcelain and has grown from nothing to 7% in glassware. At the same time, the company has become the largest producer in Europe of technical ceramics and an important new factor in the fine furniture field.
3. There have been fewer strikes.
4. It has been easier to make changes affecting jobs. For example, a few years ago, the cost of insulators fell, and we found it financially desirable to close one of our technical ceramics factories to concentrate all the work in one factory. Because the workers and their representatives had been included for so long in our thinking, they understood and believed that it was necessary, and, further, that we would go ahead with investment that would give them a stronger future. (For example, ceramics are more resistant to heat and generate less pollutants than metal. They thus have promise for use in automobile and other engines.)

Today, 90% of Rosenthal's German employees own stock in the company.

The way in which this was handled was that Rosenthal management first developed a technical plan that met operating objectives. Then, in cooperation with employee representatives, the company developed a special plan—a plan publicly described by union representatives as a "model for German industry." No workers were laid off, and the reduction was accomplished over a 3-year period through retirement, early retirement and offers of jobs at other Rosenthal facilities. Some facilities were near by, but for those at a distance, the company provided special bus service. Employees who



DEUTSCHE ZUSAMMENFASSUNG

In der heutigen Zeit wird es fuer den einzelnen immer schwieriger, sich als Mitglied einer Gemeinschaft zu fuehlen und zu verstehen, welche Rolle er spielt.

Mitursache dafuer ist die Tatsache, dass in der westlichen Gesellschaft materiellen Werten eine zu grosse Bedeutung zugemessen wird und das elementare menschliche Beduerfnis nach geistiger Befriedigung in einer geradezu gefaehrlichen Weise vernachlaessigt wird. Die in vielen Lebensbereichen herrschende Anonymitaet traegt diesem Beduerfnis nicht Rechnung und fuehrt zu sozialer Unruhe und Instabilitaet.

Um diesem Problem zu begegnen, verfolgt die Rosenthal AG eine dritte Alterna-

preferred a job with another company received severance pay.

5. Further evidence of the employees' sense of responsibility is the lowered absenteeism rate Rosenthal has experienced as a result of the co-ownership plan. Sick days fell sharply immediately after it was introduced, and the company's absenteeism rate has remained below that of the industry average ever since.

6. The unity of feeling between management and employees co-ownership can bring about is illustrated by the key role employees played in helping management preserve the company's independence. Until about four years ago approximately 40% of Rosenthal was owned by a major bank. The bank decided to sell its position to either one of two major conglomerates. This was at a time when the stock was undervalued, and for comparatively little money, the conglomerate could have bought the Rosenthal name, its factories and its management. The management team was opposed but lacked the power to prevent such a sale by themselves. Their employment was subject to contract, which the Supervisory Board could simply have cancelled. But the employee representatives agreed with management and said to the Board members, we'll outvote you. So sensible people revised their thinking and allowed management to sell the 40% to small shareholders who maintain a personal interest. In this way the feeling of responsibility for the company on the part of the workers enabled Rosenthal to maintain its freedom.

Social stability depends on the predominance of a majority view. This, in turn, is

tive, einen Mittelweg zwischen Kapitalismus in seiner Reinform und buerokratischem Kommunismus; die Mitwirkung der Arbeitnehmer durch Einraeumung von Mitbestimmung und Kapitalbeteiligung. Anfaenglicher Widerstand seitens der Betriebsleitung beruhte auf der Annahme, Mitbestimmung ziehe Verzoegerungen bei der Meinungsbildung nach und bringe die Politik ins Spiel. Dies sollte sich jedoch als falsch erweisen. Mitbestimmung erfordert seitens des Management Leitung und Planung, nicht "Herumkommandieren".

Grundvoraussetzung einer stabilen Wirtschaftsdemokratie ist echte Kommunikation zwischen allen Beteiligten. Sie erfordert Umdenken seitens der Betriebsleitung einerseits und seitens der Arbeitnehmer und Gewerkschaften andererseits und laesst so Konfrontationen keinen Raum.

Das Rosenthal-Modell ist der gesetzlichen Mitbestimmung einige Schritte voraus, was die Beteiligung an Eigentum und Kapitalangeht. Die Eigentumskonzentration in wenigen Haenden ist mitursach-

possible only through participation by citizens in deciding by whom they are to be represented, and who they choose to remove or replace. I think participation of this kind is undervalued compared with wealth, which we tend to overvalue. Look, for example, at the situation of South Africa. Their standard of living is considerably higher than that of other African countries yet participation for Blacks does not exist as it does for others in the same country, and the result is a highly explosive situation.

Only when an employee feels a party to decisions his company makes will he identify personally with issues and events affecting the company. Otherwise, the employee feels he is "down here" while "those people up there" make the decisions.

Capitalism, communism and socialism have all failed. All result in big bureaucracies and employee alienation. Marx was right in his analysis but wrong in his solution. Alienation and anonymity are common to all industrial societies. In fact, they are, if anything, worse in the communist world than in the capitalist world. They are the reason for terrorism, drug abuse and people giving up, not wanting to try any longer. They are at the root of many of the most serious dangers of our time. Expecting material benefits to produce happiness without human contact is a serious and mistaken assumption of our industrial society.

Employee participation through communication and sharing decision-making as well as ownership is the only alternative since it works materially and emotionally. ■

lich fuer den schwindenden Kontakt zwischen "oben" und "unten". Die Abschaffung des Privateigentums ist keine Loesung, in verstaatlichten Industrien wie in England, der DDR und der UdSSR kann sich der kleine Mann mit seinem Betrieb nicht identifizieren.

Die Notwendigkeit der Arbeitnehmerbeteiligung moegen die folgenden Ueberlegungen verdeutlichen:

Ein Betrieb, der einen Bruttogewinn von 1 Million DM erzielt hat, hat vier Alternativen. Einmal kann er den Gewinn in neue Maschinen investieren, ohne Loehe und Gehaelter zu erhoehen. Dieses Vorgehen ist den Arbeitnehmern gegenueber unfair und wegen des Widerstandes der Gewerkschaften unrealistisch.

Weiterhin kann er auf Kosten von Investition, Expansion und Rationalisierung die Loehe und Gehaelter erhoehen. Dass dies ein Schritt in die falsche Richtung ist, zeigt das Beispiel Grossbritanniens. Die Folge waere verminderte Konkurrenzfaehigkeit und letztendlich Arbeitslosigkeit.

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den Betrag zu Einkommenserhöhungen zu verwenden und Neuinvestitionen durch Preiserhöhungen zu finanzieren. Dieser häufig gewählte Kompromiss ist eine Scheinlösung, da die Einkommen effektiv nicht erhöht werden.

Die einzige wirtschaftlich vernünftige Lösung ist die Beteiligung der Arbeitnehmer. Investitionen sind zur Sicherung der Zukunft erforderlich, gleichzeitig müssen aber die Arbeitnehmer an den Gewinnen beteiligt werden, die aufgrund dieser Investitionen erzielt werden.

Diese Überlegungen veranlassten die Rosenthal AG 1963, die Arbeitnehmerbeteiligung einzuführen. Zunächst wurden zu Ende jeden Jahres Gewinnbeteiligungen in bar ausbezahlt. Es folgte die Einführung eines langfristigen Sparprogramms. Zunächst erhielt jeder Arbeitnehmer eine Aktie im Wert von ca. 420 DM, der Erwerb weiterer Aktien wurde durch Zuschüsse unterstützt, die nach Dauer der Betriebszugehörigkeit gestaffelt waren.

Ein weiterer Investitionsanreiz wurde dadurch geschaffen, dass die Arbeitnehmer die Gelegenheit erhielten, auch in "Kapitalanlagegesellschaften auf Gegenseitigkeit" zu investieren.

Mittlerweile sind 90% der Arbeitnehmer bei Rosenthal an dem Unternehmen finanziell beteiligt, und die Belegschaft als Ganzes

besitzt 10% des Unternehmens.

Die finanzielle Seite ist aber nur ein Aspekt, der andere ist die Beteiligung der Arbeitnehmer an betrieblichen Entscheidungen. Beides—Kapitalbeteiligung und Mitbestimmung—hat sich als äußerst positiv erwiesen und sich in vielfacher Hinsicht ausgezahlt.

Das Ergebnis ist ständige Produktivitätssteigerung, Erhöhung des Marktanteils, weniger Streiks und Krankmeldungen und weniger Probleme bei betrieblichen Änderungen. So konnte die notwendig gewordene Schliessung einer Fabrik durch Entwicklung eines Planes und durch Zusammenarbeit mit Arbeitnehmervertretern ohne Entlassungen in einer Weise durchgeführt werden, die von Gewerkschaftsvertretern als "Modell fuer die deutsche Wirtschaft" bezeichnet wurde.

Die Solidarität zwischen dem Management und der Arbeitnehmerschaft wurde auf eindrucksvolle Weise demonstriert, als es darum ging, die Unabhängigkeit des Unternehmens zu bewahren. Eine Bank wollte ihren Anteil in Höhe von 40% an Grosskonzernen verkaufen. Dies konnte durch Unterstützung der Arbeitnehmervertreter verhindert werden. Verkauft wurde statt dessen an Kleinaktionäre, die ein persönliches Interesse am Schicksal des Unternehmens haben.

Soziale Stabilität ist bedingt durch die Einhaltung demokratischer Spielregeln. Wenn der Gewinnerzielung einen bedeutend höheren Stellenwert eingeräumt wird als der Beteiligung in der oben beschriebenen Weise, so führt dies zwangsweise zu Spannungen. Als Beispiel mag Suedafrika dienen, wo ein erheblich höherer Lebensstandard als in anderen afrikanischen Ländern erreicht wurde, den Schwarzen aber keinerlei Mitwirkungsmöglichkeit eingeräumt wurde.

Ein Arbeitnehmer kann sich nur dann mit seinem Unternehmen identifizieren, wenn Entscheidungen nicht "von denen da oben" ueber seinen Kopf hinweg getroffen werden.

Kapitalismus, Kommunismus und Sozialismus haben sich nicht bewährt, da sie zu einer Aufblähung der Verwaltung und einer Entfremdung der Arbeitnehmer geführt haben. Entfremdung und Anonymität sind allen Industriegesellschaften gemeinsam und sind Ursache fuer Terrorismus, Drogenmissbrauch und Resignation. Dass Reichtum allein gluecklich macht, ist einer der grossen Irrtümer unserer Gesellschaft.

Die Einbeziehung der Arbeitnehmer in Entscheidungsprozesse und ihre Beteiligung am Unternehmen sind die einzige Lösung, die sich materiell und ideell als tauglich erwiesen haben.



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Venture Capital in the U.S. and Germany: A Comparison

For the last few years, German investors have increasingly participated in venture capital investments in the U.S. Among the more notable developments were the first foreign-owned Small Business Investment Corp. (SBIC)* which was funded by a well known German family and the raising of over \$15 million for U.S. venture capital by a Munich-based portfolio management company. Indeed, German investors have even successfully started a Minority Enterprise Small Business Investment Company (MESBIC)**, a very specialized section of venture capital, which has seen many failures.

After a recent survey conducted by our firm, we estimate that over a \$50 million has been invested by Germans within the last five years in the U.S. in the form of venture capital.

The source of these funds are largely wealthy individuals and families—paralleling the early history of venture capital in the U.S. itself—while institutions and large corporations are carefully watching the market

*Government chartered corporations which may obtain low cost funds from the Small Business Administration for investment in small companies.

**A typical SBIC which invests only in companies majority-owned by members of qualified minorities.

but have been hesitant to make significant commitments.

The above demonstrates that the well known venture capital gap between the U.S. and Germany is not rooted in a lack of supply of risk-oriented capital—as had been frequently suggested—but rather in a lack of opportunity. This is not a lack of opportunity of suitable investments, even if in the U.S. there is a wide choice, but it rather is the uncertainty of the realization of the ultimate goal of the (venture) capitalist substantially augmenting his capital, which has held back the development of an organized venture capital industry in Germany.

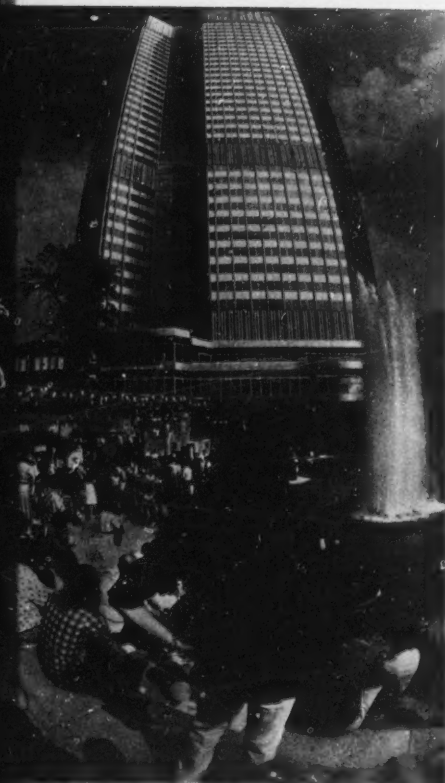
At this point it seems overdue, at least for all those not usually concerned with this subject, to give a short description of venture capital in the U.S. and to the extent it exists there, in Germany.

\$50 million has been invested by Germans within the last five years in the U.S. in the form of venture capital.

The making of investments with a high risk/reward ratio is, of course, nothing new or even peculiar to any given place or even period in history. In effect much of the early investment in the Americas, including many exploratory voyages, were financed by risk



by Gregor Mettinger
Associated European Capital Corporation



capital in the classical sense.

The use of the expression, "venture capital", developed only after World War II and it has come to signify pools of risk capital which have some or all of the following characteristics:

- The amount invested represents only a fraction of the total assets of the investor
- Even a total loss of the investment will have a negligible impact on the financial stability or security of the investors
- Funds are invested in small companies which are either in the developmental stage or in an early growth phase and are expected to expand rapidly
- Investment takes principally, but not exclusively, the form of equity
- The funds provided by the investor(s) are invested on their behalf by professional managers who have substantial discretionary powers over the paid-in-capital and normally do not need approvals from the investor(s) on an ad hoc basis prior to proceeding with an investment
- Contractual agreements between the investors and managers provide for an extended period of illiquidity
- Funds are spread over a number of investments

The most important characteristic differentiating venture capital from other types of risk capital is the existence of a defined pool of funds which has been committed by the investors prior to the selection or approval of specific investments.

While the term venture capital does not apply only to investments in certain industries, the objective of selecting companies with high growth expectations tends to give preference to certain industries which are expanding rapidly such as electronics or telecommunications and at times it seems that trends develop into fashions—most recently genetic engineering—which sweep the industry.

But even if they meet some of the above listed criteria, funds which are invested directly into assets such as real estate, oil and gas, mineral rights etc. are normally not considered venture capital. Similarly, tax shelters and mutual funds are considered distinct and separate industries.

It was a European who became the real missionary of venture capital.

The first venture capital company is generally considered to be Venrock Inc. started by the Rockefeller family in 1941, followed shortly thereafter by similar efforts of the Whitney and Phipps families. But it was to be a European, French-born General

Doriot, who as a professor at the Harvard Business School and as founder of American Research and Development Corp. (ARD) became the real missionary of venture capital.

In 1958, Congress, in an effort to foster the formation of pools of funds, made available to SBICs loans at below-market rates through the Small Business Administration. Within ten years about 700 of these companies had been formed, but their number has been declining steadily to about half that.

In the late sixties the success of ARD, which had found a major winner in the Digital Equipment Corp. which it had helped start, had become apparent to all and during 1968 and 1969 large amounts of funds were raised by professional venture capital managers through private partnerships, because SBICs were considered too cumbersome as a result of governmental regulation. By the beginning of the year 1970 between \$2.5 and \$3 billion were committed to venture capital. The increase in capital gains taxes which occurred at that time and the collapse of the new-issue market in the mid 70s were adverse influences, but since then the industry has shown healthy growth and the total pool of funds now exceeds \$6.5 billion.

During that time, of course, a large number of professional venture capital managers have developed expertise matched in no other country regarding the identification and selection of entrepreneurs and companies likely to succeed. And while the nature of the business required the taking of high risks (and accepting of some failures) in the search for the new Xerox, Digital Equipment or Texas Instruments, the careful spreading of the risk has brought to the industry typical long-term returns between 20 and 25% p.a.

Of the total pool of funds about a quarter is being managed by SBICs, many of which are owned by financial institutions, and about half by independent venture capital management firms which have been funded by pension funds, insurance companies, wealthy individuals and some corporations. The remaining quarter is accounted for by specialized subsidiaries of major corporations.

The corporate participation should not be further surprising since it permits the investor to keep up-to-date and perhaps have preferential access to emerging technologies or industry segments which are not part of the corporations' main business thrust, but might affect it later. This "technology window" permits an inside view of areas which are not sufficiently well covered by in-house research and development. This shortens the learning curve should the company later want to enter one of those new fields and

meanwhile those investments are expected to grow and result in a financial gain.

The realization of the gain is, of course, very closely tied to a lively stock market which permits new stock issues of small companies. The sale of the company as a whole is also a frequent occurrence, but for both the entrepreneur and the venture capitalist this is a less desirable method. Preferably it should not be after the company has become public and relatively large and predictable.

The first efforts to transpose the concept of venture capital from the U.S. to Europe date from the late sixties when General Doriot founded jointly with a large number of European financial institutions the European Enterprise Development Corp. (EED) in Paris.

In 1975 a group comprising almost all important banks in Germany created the Deutsche Wagnisfinanzierungs-Gesellschaft GmbH in Frankfurt which remains the only company in Germany dedicated principally to venture capital in the American sense. It has made about 30 investments since it was created. Similar organizations were also founded in some other European countries.

The first efforts to transpose the concept of venture capital from the U.S. to Europe date from the late sixties.

If those companies have not fulfilled the high expectations which their founders initially had—indeed, EED had to be wound up—it seems appropriate to review the environment for risk capital in Germany—to determine why a venture capital industry of the breadth and sophistication of that in the U.S. has not developed there.

That this objective is desirable from a macro-economic standpoint is hardly any more a point of discussion since numerous studies have shown that growth in employment comes from small and medium sized companies. Overall, large companies in Western economies have not contributed significantly to new employment, since jobs added by some industries have been roughly balanced by job losses in others.

One of the first and most striking differences which becomes apparent in looking at the availability of risk capital in Germany is the lack of transparency.

While in the U.S. there are various directories, trade journals and other sources of information on the participants in the industry, in Germany it is extremely difficult to identify the provider of risk capital.

Obviously a primary reason is that except for Wagnis, there are no pools of funds

committed exclusively or principally for investment in small growth companies.

Capital for such investments, which are examined typically on an ad-hoc basis, may come from holding companies owned by wealthy families, wealthy individuals and from CPAs who act as syndicators for clients. Banks, pension funds, or insurance companies which in their normal investing policies are risk-adverse have no special ventures or segregated pools of funds available for this purpose. While in the U.S. the majority of investments is made jointly by two or more venture capitalists, in Germany typically there is only one investor with whom the entrepreneur is often literally confronted.

One of the reasons why the investors who are ready to accept high risks for high rewards may shy the limelight is that they are held in low esteem by the public. Often referred to as "speculators" or as "greedy" in the media, resentment and envy betray ignorance of the substantial risks taken or the average return which is, of course, lower than the occasional high payout. The role of the venture capitalist as midwife and nurse to successful companies is not apparent to the public.

Nor have large corporations in Germany, unlike companies in other European countries like France, Sweden or Italy, emulated the venture activities of major American companies such as General Electric Corp.

This situation does not induce entrepreneurs to systematically search out private risk capital because they are faced by too many unknowns and the chance to obtain funds from such sources appears slim. This lack of access to private sources, however, increases the importance of available government assistance.

It has been recognized that in order to create a vital venture capital industry the regulatory framework would have to be adjusted.

The one essential ingredient is the existence of a lively stock exchange, with strong over-the-counter markets. Unfortunately the markets in Germany are not receptive to companies in their early stage and it seems difficult to envision how this situation could change without a major overhaul of the laws which have shaped the investment and savings habits of at least one generation.

Without the stock market or other sources of equity funds which could provide the venture capitalist with partial liquidity and at





The role of the venture capitalist as midwife and nurse to successful companies is not apparent to the public.

the same time permit the entrepreneur to grow rapidly and to maintain control the venture capitalist is caught in a trap.

Already when making his investment, the venture capitalist may have to make contractual arrangements which would permit him to obtain liquidity, be it through distribution of company funds—which might stunt its growth—or by forcing a sale of the company

at an early stage. Clearly those are not circumstances which induce entrepreneurs to play with high stakes, risking psychologically damaging failure, if he must fear that he will not be in control, that he could be forced out of the game and that the large rewards are not his to reap.

With a minute private venture capital market entrepreneurs have come to rely on government assistance available in the form of low-interest loans and grants from federal and local government bodies in Germany. Thus entrepreneurs are accustomed to use of public funds already in an early stage of the development of their companies.

In effect we are faced with a situation where there is no mechanism comparable to the U.S. venture capital companies which funnel private equity capital in significant amounts to start-up or other companies in their early phases of growth.

It seems that the first step towards a venture capital industry will require that German investors, particularly financial institutions and corporations, which have so far completely stayed on the sidelines, gain experience and confidence by participating in U.S. venture capital pools. Once those investments are successful, as they should be, only then can our economic-regulatory climate favoring domestic German venture capital develop. ■

DEUTSCHE ZUSAMMENFASSUNG

In den letzten Jahren ist die Beteiligung deutscher Anleger an Venture Kapital-Gesellschaften in den USA ständig gestiegen und rangiert jüngsten Umfragen zufolge in einer Größenordnung von über 50 Millionen Dollar.

Die Mittel stammen vorwiegend von Privatleuten, die Industrie zeigt zwar Interesse, übt im übrigen aber Zurückhaltung.

Ursache dafür, dass sich Venture Kapital in Deutschland nicht im gleichen Umfang wie in den USA entwickelt hat, ist

weniger ein Mangel an Risikokapital als vielmehr die Ungewissheit darüber, ob ein nennenswerter Gewinn erzielt werden kann.

Obschon Risikoinvestitionen nicht neu sind, hat sich der Begriff Venture Kapital erst nach dem Zweiten Weltkrieg durchgesetzt. Er umfasst Risikokapital, auf das alle oder einige der folgenden Aussagen zutreffen:

- Die Investitionssumme stellt lediglich einen Bruchteil der Aktiva des Anlegers dar.
- Sogar ein Gesamtverlust der Investition beeinträchtigt die finanzielle Stabilität oder Sicherheit des Anlegers kaum.
- Investiert wird in kleinen Gesellschaften, die sich entweder noch im Aufbau oder in einer frühen Wachstumsphase befinden und die eine schnelle Expansion erwarten

lassen.

- In der Regel erfolgen Investitionen in Aktien.
- Die zur Verfügung gestellten Mittel werden von relativ unabhängigen Fachleuten im Auftrag der Anleger investiert, ohne dass in jedem Einzelfall deren Zustimmung eingeholt werden muss.
- Zwischen dem Anleger und diesen Fachleuten wird vertraglich eine verlängerte Illiquidität vereinbart.
- Die Mittel werden auf eine Anzahl von Investitionen verteilt.

Im Gegensatz zu anderen Formen der Risikofinanzierung werden hier von den Anlegern Mittel zur Verfügung gestellt, bevor überhaupt bestimmte Objekte ins Auge gefasst werden.

Seit Mitte der siebziger Jahre weist dieser Wirtschaftszweig trotz einiger gegen-

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laeufiger Einflüsse ein gesundes Wachstum auf und verfügt nunmehr über ein Kapital von mehr als 6,5 Milliarden Dollar.

Seit Gründung der ersten Venture Kapital-Gesellschaften haben sich natürlich eine ganze Anzahl der damit beschäftigten Fachleute Fähigkeiten angeeignet, die in anderen Ländern ihresgleichen suchen, was das Aufspüren erfolgversprechender Objekte betrifft. Und obwohl hohe Risiken in der Natur der Sache liegen, konnten durch eine geschickte Risikoverteilung langfristige Gewinne zwischen 20 und 30% p.a. erzielt werden.

An der Bereitstellung der Gesamtmittel sind neben mittelständischen Unternehmen und unabhängigen Firmen auch Grossbetriebe zu einem Viertel beteiligt. Dies sollte in Anbetracht der Tatsache nicht überraschen, dass es dem Anleger so möglich ist, auf dem laufenden gehalten zu werden und sich im Bedarfsfall bevorzugten Zugang zu neuen Technologien oder Industriezweigen zu verschaffen.

Dieses "Fenster zur Technologie" gewährt Einblick in Fachgebiete, die nicht hinreichend durch eigene Forschungs- und Entwicklungsarbeit abgedeckt werden. Dadurch wird eine Verkürzung des Lernprozesses für den Fall erzielt, dass der Betrieb zu einem späteren Zeitpunkt den betreffenden Sektor aufgreifen will.

Das Konzept der Venture Kapital-Gesellschaft wurde Ende der sechziger Jahre nach Europa übertragen. Im Jahre 1975 gründete ein deutsches Bankenkonsortium die Wagnisfinanzierungsgesellschaft GmbH in Frankfurt, die noch immer als einzige deutsche Gesellschaft vorwiegend mit der Anlage von Venture Kapital im amerikanischen Sinne befasst ist. Seit ihrer Gründung hat sie mehr als 30 Investitionen getätigt.

Die Ursachen dafür, dass sich in Deutschland das Konzept der Venture Kapital-Gesellschaften nicht in demselben Umfang wie in den USA durchgesetzt hat, sind vielfältig.

Zunächst liegt dies an dem Mangel an Transparenz in Deutschland. Im Gegensatz zu den USA ist es in Deutschland ungleich schwerer festzustellen, aus welchen Quellen das Risikokapital stammt. In der Regel sind dies Privatleute, und während in den USA ein Grossteil der Investitionen von zwei oder mehr Kapitalgebern getätigt werden, ist es in Deutschland meist nur ein Anleger, mit dem sich der Unternehmer im wahrsten Sinne des Wortes konfrontiert sieht.

Auch wird das Image des "geldgierigen Spekulanten" der tatsächlichen Bedeutung der Anleger als Grundsteine erfolgreicher Unternehmen nicht gerecht. Die Schwierigkeit, unter diesen Umständen private

Anleger zu finden, erhöht die Bedeutung staatlicher Unterstützung.

Einmal ist die Anpassung der Rahmenbedingungen erforderlich. Ohne wesentliche Änderung derjenigen Gesetze, die die Investitions- und Spargewohnheiten einer ganzen Generation geprägt haben, kann die Aufnahmebereitschaft der deutschen Märkte für Unternehmen im Anfangsstadium nicht wesentlich erhöht werden.

Der Zwang, teilweise liquide zu bleiben und gleichzeitig dem Unternehmer weitgehend freie Hand zu lassen, bringt den Anleger in eine Zwickmühle.

Zum anderen sind die Unternehmer in Ermangelung ausreichenden Privatkapitals auf staatliche Unterstützung durch zinsgünstige Darlehen und Zuschüsse angewiesen und verlassen sich schon in einem sehr frühen Stadium darauf.

Es ist somit festzustellen, dass es ein deutsches Äquivalent zu den amerikanischen Venture Kapital-Gesellschaften nicht gibt.

Ein erster Schritt in diese Richtung dürfte die Beteiligung deutscher Anleger—insbesondere Finanzinstitute und Grossbetriebe—an Venture Kapital Pools in den USA sein, um das Vertrauen zu fördern und mit der so gewonnenen Erfahrung eine Basis für dieses Konzept in Deutschland zu schaffen.



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The American Economic Policy and Europe

Over the past 18 months, I've given particular attention to the question of how trade between nations can best grow and prosper. I want to discuss this subject today because I believe the world trade system is at a critical juncture.

Specifically, I wish to address here three issues of crucial importance to United States trade policy toward Europe: America's commitment to free trade and our attempt to defeat protectionist measures aimed at imposing local content requirements in manufactures; our trade policy regarding the steel industry; and, finally, our present course in matters of trade with the Soviet bloc.

Simply put, the world trade system cannot survive the protectionist tendencies and "beggar thy neighbor" attitudes which characterize certain developments taking place. The concepts of equal opportunity and market access which are the genesis of current reciprocity legislation are the core principles of free trade philosophy. Without such equality, all nations engaged in international trade lose the benefits from comparative advantage.

Since the establishment of the General Agreement on Tariffs and Trade in 1948, member countries have been committed to a system of multilateral trade arrangements to reduce tariffs and other barriers to trade for

the reciprocal benefit of all. The United States is committed to the GATT system and to extending and strengthening its disciplines. The United States has been well-served by the GATT system and that system has shown itself to be an adaptable force for trade liberalization through its various negotiating rounds. We hope that the upcoming GATT Ministerial in November will focus on the challenges of the future, particularly in the services and investment area. We will certainly encourage all member nations to join with us to expand equal opportunities in each others' markets.

The Need for Equitable Market Access

Despite the gains in eliminating barriers to free trade over the past thirty years, there remains a need for greater, more equitable, access to foreign markets; and a more concerted effort on our part and by our major

The United States is committed to the GATT system and to strengthening its disciplines.

industrial trading partners to make this happen. I believe that the United States has led this struggle and is widely recognized for having and maintaining the most open, the freest and fairest market system in the world.



by Malcolm Baldrige
United States Secretary of Commerce



The international system has expanded greatly from the original 48 GATT members to one in which over 100 nations participated in the last major round of trade negotiations. The existing rules did not envisage this vast expansion of the trading system.

More importantly, we are witnessing increasing deviations, in certain areas, from the fundamental principles underlying free trade. As successive trade negotiations over the past 30 years have peeled away traditional trade problems, they have revealed deeper and more difficult obstacles to trade. Nations which have agreed to reciprocal tariff reductions have often simply raised more subtle nontariff barriers to protect particular sectors which in turn serve to deny reciprocal market access to others. National preferences for local products, industrial policies which foster or protect particular sectors, export credit subsidies, closed dis-

tribution channels, regional investment incentives, and hundreds of other devices have emerged which still prevent the functioning of free markets. These inequities coupled with the present global economic downturn have considerably weakened adherence to free trade principles and made more sharply unfair the denial of market access on an equal basis.

In addition, existing arrangements within the GATT have been limited in focus to commercial trade in goods. There are currently no adequate multilateral disciplines in key areas such as trade in services and direct investment. This Administration already stated its position that the international trading community can no longer ignore comprehensive action in these areas.

New Statutory Authority

The Administration believes that there is a need to strengthen and clarify the tools available to the President to provide more equitable market access in foreign countries to American business.

First, the Administration supports legislation which would provide a statutory mandate for the President to undertake negotiation of international rules in the area of services and investment. There are few agreed upon international disciplines governing services and investment. An explicit Congressional mandate would be useful in gaining more cooperation from our trading partners in our efforts to make progress in these areas.

Roughly 7 out of 10 Americans are employed in the services sector. The services sector accounts for approximately 65 percent of U.S. GNP. Based on data collected by Commerce's Bureau of Economic Analysis, we recently estimated that international activities in services—exports, and income from overseas affiliates—amounted to \$128 billion in 1980. Continued benefit from these trade flows is increasingly threatened by barriers erected in foreign markets. We must make it crystal clear to our trading partners that we are united in our resolve to remove these barriers and that we have the political will to do so.

Secondly, the Administration may be willing to consider new statutory authority permitting trade complaints based on inequitable market access. Such authority, if properly defined, and that may prove difficult, could strengthen the President's hand in dealing with foreign situations where equitable treatment does not exist and where international discipline is inadequate or nonexistent. The Administration welcomes the opportunity at a later time to work with the Committee or its staff on the specifics of



such a provision. I would note, however, that any such provision should not stem from a desire to achieve narrow bilateral trade balances in specific sectors. Nor do I believe that we should establish a standard that would move us in the direction of sectoral reciprocity. However, consistent with our international trade obligations, we must make clearer that the pace at which equitable treatment has developed has not been adequate and that present and foreseeable economic realities urge us—all of us in the multilateral system of world trade—to speed up this process.

Because the United States is the largest trading nation, we have gained much from free trade and many nations of the world have benefitted greatly from our open market practices. But we also lose much when trade is artificially distorted and this must be an element to be considered. Statutory authority clarifying and strengthening the President's ability to deal with inequitable market access can be a means of increasing the gains from free trade.

While the Administration has firmly committed itself to free international trade, certain domestic developments threaten the prospects of a more liberalized international trade regime. The appearance of "local content" bills before the legislature is one such development, which is potentially damaging to both the American economy and to Europeans eager to do business in the United States.

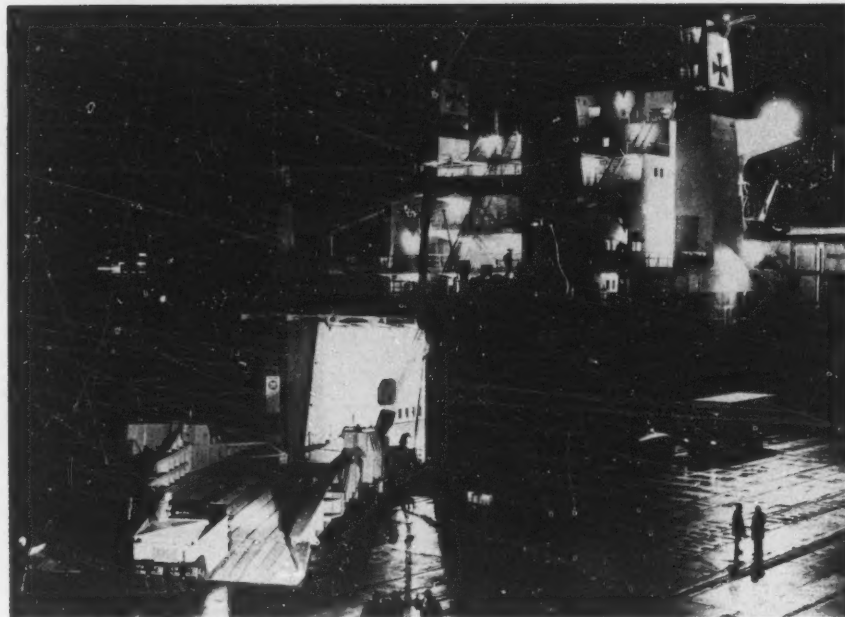
These bills require that motor vehicles sold in the United States contain certain percentages of domestic parts and labor ... specifically, 90 percent by 1985.

Proponents of these bills claim their enactment would create 868,000 jobs ... and that they would revive the auto industry as well as the economy.

Local content would deprive U.S. auto manufacturers of the option of seeking the lowest cost sources of supply.

The analysis of an inter-agency government task force headed by the Department of Commerce, shows that enactment of local content legislation would result in the following:

First, if auto sales in the United States were to double by 1985, local content laws would create no more than 200,000 jobs in the auto sector. But a substantial part of that expansion would be offset by the jobs which would be lost due to potential cutbacks in the U.S. facilities to distribute and transport auto imports: by the closings of foreign car dealerships; by port workers who handle



cars who would be laid off; and by existing U.S. assembly plants for imported cars which would be abandoned.

Second, the American consumer would pay about ten percent more for a new car, or nearly \$1,000 on the average car at today's prices; plus an increase in the CPI of about 0.3 percentage points.

Third, local content would deprive U.S. auto manufacturers of the option of seeking the lowest cost, highest quality sources of supply.

Fourth, local content would add enormous regulatory burdens to government, as somebody would be given the task of documenting the origin of the over 15,000 parts that make up a car.

Fifth, a quota system would reduce competition from foreign producers just at a time

the auto industry is making major efforts to improve their ability to compete with those producers in the growing world market.

The future health of the auto industry must be based on market realities. The keys to competitiveness are cost and quality ... not government quotas. Local content would reduce the imperative for auto companies to achieve cost reductions and quality improvements.

Sixth, the proposed local content laws violate GATT provisions which specifically prohibit domestic content requirements. If local content becomes law, GATT signa-



tories can be expected to seek compensation for lost exports to the U.S. in excess of \$15 billion. Further, if Congress passes legislation that specifically violates international trade agreements to which the U.S. is a signatory, where does that put America in insisting that other nations abide by established trade laws?

The Administration is negotiating right now to secure trade liberalization measures by other nations, especially Japan and the European Community. These negotiations are beginning to work, as evidenced by Japan's recent efforts to reduce import restrictions on U.S. products, and by the conclusion of a US-EEC steel agreement. But passage of a local content law would reverse those successes. Even worse, it could nullify them.

We're in danger of inviting retaliation that might expand to agriculture, aircraft, computers, electronic equipment, and a large number of the products your companies produce. With 1 out of 7 manufacturing jobs dependent on exports, we would lose more jobs than we would gain.



Our steel industry is now engaged in a major program of modernization in order to meet the challenges brought about by a changing market for steel. To support the industry in its efforts, the Administration has taken a number of steps to reduce tax and regulatory burdens and to prevent unfair competition—all of which can act as a drain on scarce capital needed to implement a meaningful modernization program.

Modernization of production and facilities will contribute to the long term competitiveness of the industry. In the short term, industry growth will depend upon the rate of general economic recovery. In particular, developments in the automobile, construction and machinery markets will bear

The keys to competitiveness are cost and quality ... not government quotas.

directly upon steel's prospects for growth this year. In turn, improvement in these industries will be determined largely by the direction taken by interest rates and the general outlook for sales and economic growth in 1982.

Forecasts have varied as to the outlook for steel demand in 1982. Some industry forecasts projected a slight improvement in steel consumption, especially in the second half of the year. Partly because of the current steel trade investigations, some industry forecasters also expect to see a small increase in domestic shipments over last year's level of 87 million metric tons, which would counterbalance sluggish demand in the first six months of the year. For 1982 as a whole, I cannot see much, if any, increase in production or shipments. As the economic recovery begins to take hold, increased activity will occur across a broad spectrum of industries and commercial development. Capital and consumer spending should both pick up and increase the demand for steel. Since the rate of capital investment tends to lag behind the general business cycle, increased activity in the automobile market is steel's best hope for growth until late in the year.

Beyond 1982, the industry's growth will be shaped by its ability to respond to changes in the market that affect the production, consumption and demand for steel products. Lower rates of economic growth since the mid-1970's have resulted in reduced growth in the demand for steel worldwide. This occurred at the same time that new suppliers located in developing countries entered the international market and new capacity in industrialized countries, particularly Western Europe, came on stream. The net result has been global excess capacity and a scramble to obtain or hold market positions. Recent Department of Commerce estimates show growth in demand for steel products in the industrialized world averaging about 1 percent per annum. Although there are likely to be sporadic periods of more substantial growth caused by investment in capital equipment, these growth periods are expected to be followed by declines that will result in only modest growth over the long term.

New products and technologies have brought about a dramatic change in the

demand for steel. Technological improvements that have enhanced the strength and versatility of steel mean that lesser quantities are needed in many instances of application. Greater demand for lighter and smaller cars has had a fundamental impact on the amount of steel required by the automobile industry. The average amount of carbon steel in a U.S.-produced automobile dropped from over 2100 pounds in 1975 to 1600 pounds in 1981. In addition, technological progress in other industries has resulted in the development of several non-metallic materials which, in many applications, are cheaper and desirable substitutes for steel. Increased use of plastics in packaging is a prime example of this phenomenon.

The steel industry is responding well to these challenges. Already, the industry has announced plans for over \$6 billion of investment expenditures designed to modernize American steel production. This is investment above and beyond normal capital spending for upkeep and other costs of operation.

Much of this would not have been possible had the Administration and Congress not taken the actions necessary for a long term recovery of the U.S. economy. The accelerated depreciation provisions of the Economic Recovery Tax Act have helped to free capital necessary for investment projects. The personal tax cuts, by releasing more income for savings, will also augment available lending capital. These and other components of the tax program will spur investment in both the steel industry and those industries which are chief consumers of steel products. In addition, legislation which permits the stretch-out of environmental compliance deadlines will enable the steel industry to devote more of its investment to modernization than it has been able to do in the past.

While modernization of U.S. steel production is critical, this will do little to alleviate the crisis in steel if strong measures are not taken in Western Europe to eliminate steel subsidies and excess capacity. In our discussions with EC and foreign government officials, we have repeatedly stated that Europe must move aggressively to restructure its steel industries and discontinue subsidization. It must be recognized that the EC faces a difficult problem in this endeavor. In a number of countries, the implementation of meaningful structural changes will be made at a significant political and social risk to the governments and economies concerned. For example, only recently Belgian steelworkers have rioted, causing hundreds of injuries, in response to prospective job losses from restructuring.



We will continue to give every encouragement to those within the EC who are attempting to bring about a serious rationalization of their steel industries. Under their State Aids Code, most EC member states have committed themselves to limit emergency aid and institute tough restructuring plans. Most forms of overt subsidization are scheduled to end by 1985, and the Code requires that continuation of assistance beyond July 1 of this year be linked to reductions in capacity. This is an important first step, but more needs to be done. In the interim, this Administration will not permit our steel industry to be damaged by government support of industries abroad.

British Steel Corporation is an example of the results determined restructuring can bring about. Since 1973, capacity has been cut by 50%, and the company has been reorganized into independent profit centers. In the last two years, over 45,000 redundant workers have been eliminated, mostly through attrition. BSC is now hoping to make profit in 1982, its first in several years.

We are committed to protecting domestic producers from injurious unfair import competition which could undermine the industry's modernization and recovery strategy. While the trigger price mechanism was in effect, we instituted a number of improvements to strengthen enforcement of the system. In all, Commerce in 1981 initiated five antidumping and five countervailing duty investigations, in addition to tightening up our monitoring of related party transactions. We also conducted ten import search examinations of carbon steel products and began a dozen related party audits. In addition, Under Secretary for International Trade Olmer made an unprecedented appearance before the International Trade Commission's hearings on several steel trade investigations initiated by Commerce, to underscore the Department's

resolve to eliminate injurious and unfairly traded steel imports from the U.S. market. On this occasion, he also reiterated the U.S. government's insistence that additional efforts be made by our trading partners to eliminate subsidies and excess capacity in their steel industries.

Steel imports, particularly from Europe, increased significantly in August of last year with many foreign producers openly flouting the TPM. We initiated seven investigations of major carbon steel products in November as soon as data on these August levels became available and could be incorporated into an injury argument for the ITC. I believe that these cases convinced foreign governments and producers of our sincerity regarding the enforcement of our trade statutes, but a lot of steel was already in the pipe line. Imports remained high through the rest of the year and U.S. steel producers no longer believed that the TPM was the best way to enforce our trade laws.

On January 11, seven U.S. steel companies filed antidumping and countervailing duty cases covering nine products imported from eleven countries. I immediately transferred the staff that was administering the TPM to the cases and suspended the TPM. Of the 132 antidumping and countervailing duty complaints filed in January, we initiated 109 investigations, dismissed 7 petitions, and the petition withdrew 16 of their complaints. In February, the International Trade Commission terminated 54 cases when it determined that there was no reasonable indication of injury, or potential injury, to the domestic industry in these cases.

After conducting 55 investigations as a result of the January petitions, plus twelve others brought separately since the initial filings, a United States-EEC Steel agreement was reached on October 21. The arrangement provides for the establishment of export licensing in the EEC through 1985 for ten major categories of carbon and alloy steel products exported to the United States, limiting them to a predetermined share of the US market for each product category.

in the EC and industry modernization in the U.S. No emotional reaction by the U.S. Government can help the U.S. industry over the long-run. The reasoned, judicious policy now being implemented, which combines domestic economic actions and protection from unfair foreign trade, is the proper course for the U.S. Government to follow.

This Administration, from the beginning, has made clear its commitment to a policy of linkage in relations with the Soviet Union. We have urged the Soviets to respect international norms of behavior. We have indicated that if they act responsibly and with restraint, we would be prepared to expand our non-strategic trade. We tried to encourage this process.

At the same time, we made it equally clear, I think, that we would seriously consider use of trade controls in the event of future Soviet aggressive action.

The declaration of martial law in Poland violated both the aspirations of the Polish people and the rules for East-West cooperation adopted at Helsinki. The repressive role of the Soviet Union required a firm response.

Imposing sanctions is never an easy decision. In this case, we had no choice but to apply selected sanctions if we wanted to try to influence Soviet behavior.

The West can, and must, act to influence the situation in Poland. Prudent and realistic action can encourage Warsaw and Moscow to reconsider their repressive actions.

The U.S. is pursuing a two-track strategy, imposing unilateral sanctions and seeking unified allied action.

The members of NATO have condemned the repression in Poland and have imposed a mix of diplomatic and economic sanctions.

Most recently, the European Community's Foreign Ministers proposed to restrict the Community's imports of Soviet luxury goods.

Our interest in imposing economic sanctions is to bring our economic relations with the Soviets more into line with current political and economic realities. We do not aim to cut off trade. But we see no reasons for West-

**the steel problem will be solved only
through industry restructuring in the EC
and industry modernization in the U.S.**

I do know that the agreement cannot be expected to "solve" the steel problem. It will be helpful in offsetting possible trade distortions. But the steel problem, per se, will be solved only through industry restructuring

ern governments to subsidize the U.S.S.R.'s military-industrial build-up and its ability to interfere in behalf of repressive forces in other countries.

Let me return to Poland. Our sanctions

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an alle
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**BUNDESREPUBLIK
DEUTSCHLAND**



WILLKOMMEN!

Die Auslegung der Verfassung des Bundesstaates Oklahoma durch den Justizminister dieses Staates im September 1979 fand weitgehende Beachtung. Nach seiner Lesart verbietet die Verfassung von Oklahoma ausländischen Anlegern den Erwerb von Grundbesitz in diesem Staat.

Da in vielen amerikanischen Bundesstaaten ähnliche Gesetze herrschen, schien die Möglichkeit für ausländische Geschäftsleute, in diesen Staaten Eigentum zu erwerben, in Frage gestellt.

Für Oklahoma wurde diese wichtige Frage durch sein oberstes Gericht in folgendem Entscheid geklärt:

Die Verfassung von Oklahoma erlaubt ausländischen Anlegern den Kauf von nicht landwirtschaftlich genutztem Grund und Boden, wenn ihr Unternehmen oder Geschäft in Oklahoma eingetragen ist. Eine ausländische Firma gilt dann als eingetragen, wenn sie einen in

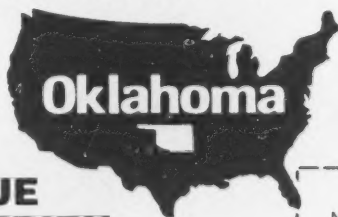
Oklahoma eingetragenen Firmennamen hat. Die Eintragung unterliegt keinen besonderen Bedingungen.

Als Folge dieses Gerichtsentscheids hat die Regierung von Oklahoma beschlossen, ausländische Investitionen in Form von Grundbesitz durch umfangreiche Programme zu unterstützen.

Ich möchte nur zwei Punkte besonders herausstellen:

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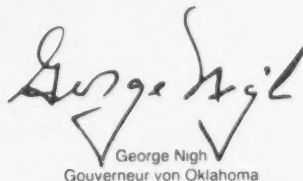
Für weitere Auskünfte wenden Sie sich bitte an das Oklahoma Economic Development Department (Behörde für Wirtschaftsentwicklung) oder an die Deutsch-Amerikanische Handelskammer.



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against Poland were imposed to make clear our opposition to the Polish Government's repressive actions and our concern for the Polish people's welfare.

As a part of these sanctions, we have refused to renew the Export-Import Bank's line of export credit insurance and to discuss rescheduling Poland's debt due us in 1982. We have not, as many have urged us to do, declared Poland formally in default. This allows us to keep pressure on Poland and, indirectly, on the Soviet Union. Declaration of default is still an option. But for now, it is a more potent weapon held in reserve.

We want to help the Polish people. We want to ease their hardships. We're supporting efforts of private relief agencies which provide food, medicines and other essentials directly to the Polish people.

The problems of the Polish economy, however, are fundamental. To overcome these difficulties, the government must return to genuine consultations with the Polish people.

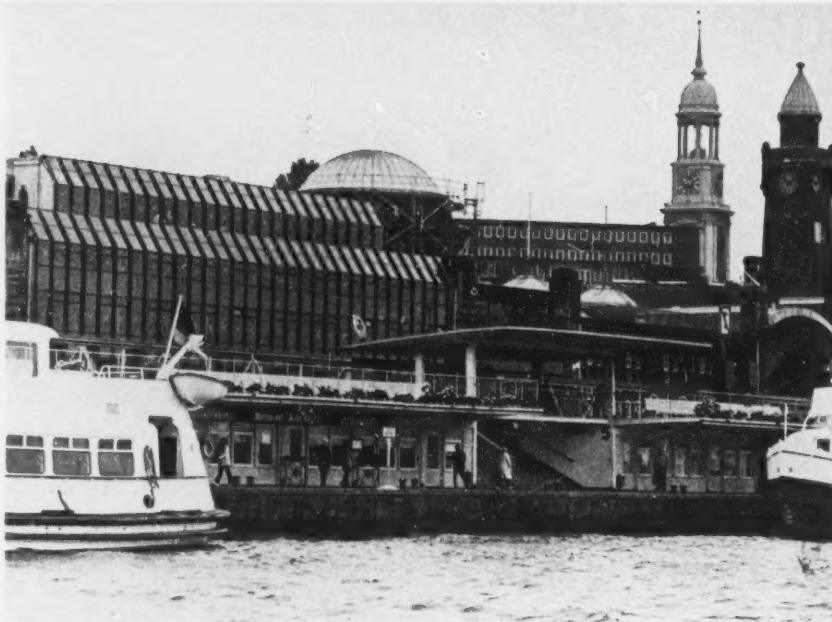
Without their acceptance, support and participation, any economic recovery plan is doomed. We would be foolish to help a recovery plan that didn't have popular support. Until martial law is lifted, the detainees are released and the basic rights of free speech and association are restored, there is little we can do.

I want to emphasize that the actions we have taken apply only to the Soviet Union and Poland. Our relations with the other countries of Eastern Europe still are based on their individual policies and actions.

We don't view Eastern Europe as a single entity, our policy distinguishes among the countries in that region, even while noting their relationship with the Soviet Union. We conduct our relations with each country of Eastern Europe according to its interest in improved relations and its sensitivity to our interests.

Our relations with Romania are strong. We support Romania's efforts to determine its foreign policy and economic ties independently, in accordance with Romanian national interests. We have many contacts with Romania, including many significant business arrangements. Last Spring, I discussed with President Ceausescu how we might expand those arrangements and we still want to pursue that road.

The recent decisions not to extend Commodity Credit Corporation (CCC) credits and make operative Eximbank's loan for GE turbines are not politically motivated. Our ties are close. But Romania's worsening financial situation could not be ignored. Extending new loans when rescheduling of existing debt was about to begin would only



complicate everyone's job.

We have urged and expect Romania to attack its problems urgently and deal with its creditors frankly. As a member of the International Monetary Fund (IMF), Romania has access to both the economic advice and financial support which will help it recover its financial health. We continue to hope that Romania's problems are temporary and that our firm business ties remain unharmed.

Our relations with Hungary are sound.



DEUTSCHE ZUSAMMENFASSUNG

Der Autor sieht das Welthandelssystem an einem kritischen Punkt angelangt, an einem Scheideweg. An drei Problemkreisen stellt er die amerikanische Auffassung und Handelspolitik, insbesondere gegenüber Europa, dar:

- Amerikas Bekenntnis zum freien Handelsaustausch und der Versuch, dem protektionistischen Ruf nach einer "local content"—Gesetzgebung entgegenzutreten;

- Handelspolitik und Stahlindustrie;
- Handelspolitik gegenüber dem Osten.

Das derzeitige Handelssystem kann den zunehmenden Protektionismus und die Tendenz zur Überwälzung von Problemen auf andere Teilnehmer am Welthandel nicht überstehen. Die Grundideen des Handelssystems, Chancengleichheit und freier Marktzugang, sind die Basis der gegenwärtigen "reciprocity"—Gesetzgebung in USA. Ohne Chancengleichheit werden alle Nationen, die sich am internationalen Handel beteiligen, am Ende Verlierer sein. Die USA befürworten das GATT-System und die Ausdehnung und Stärkung seiner Anwendungsbereiche. Das gilt besonders für die Sektoren Dienstleistungen und Investment.

Wenn auch beim Abbau der Zollbarrieren in den letzten dreissig Jahren ganz erhebliche Erfolge erzielt werden konnten, so ist dennoch mehr Chancengleichheit notwendig, mehr Marktzugang. Hier sind neue Anstrengungen sowohl der USA wie ihrer Haupthandelspartner nötig. Bei der Formulierung der ursprünglichen GATT-Regeln war nicht vorhersehbar, in welch

Since the return of the Crown of St. Stephen and extension of the multi-lateral fiber negotiations 5 years ago, trade has grown and joint investments in both countries have been established. Hungary has moved deliberately to reform its economy, maintain financial responsibility and participate more fully in international economic institutions. Its recent application to join the International Monetary Fund is one more step in that direction. We have sympathy for these efforts to strengthen Hungary's economy and look forward to even stronger trade relations in the future.

More modest progress has occurred with the 3 Eastern European countries with which

we have no trade agreements: Bulgaria, Czechoslovakia and the German Democratic Republic. Earlier this year, U.S. claims against the government of Czechoslovakia were settled and claims negotiations begun with the German Democratic Republic. With all 3 countries, we want to expand trade within the existing framework.

We also are open to their initiatives for improved economic and commercial relations.

Our policy toward Eastern Europe is clear. We want to expand in peaceful trade that can benefit us both. We are ready to do so with any country willing to reciprocate and respect our interests. We hope this may, in time, include all of them.

grossen Mass sich der Teilnehmerkreis am Welthandel ausdehnen würde. Die Verhandlungen sind schwieriger geworden. Von ursprünglich 48 Mitgliedern ist das GATT auf über 100 Länder angewachsen, die an den Handelsvereinbarungen mitwirken.

Wir sind Zeugen zunehmender Abweichungen von den Grundprinzipien des freien Handels. Mit den Erfolgen beim Abbau der Handelsschranken haben sich auch die harten Kerne der einzelnen Probleme immer klarer herausgeschält. Länder, die gegenseitigen Zollleichterungen zugestimmt haben, haben häufig gleichzeitig sichtbare nichttarifäre Barrieren aufgebaut, um bestimmte Bereiche ihrer Wirtschaft zu schützen. Nationale Bevorzugung der heimischen Produktion, eine Industriepolitik, die bestimmte Herstellungsbereiche stützt und schützt, subventionierte Exportkredite, regionale Investitionsanreize, ausländischen Produkten unzugängliche heimische Verteilerwege und Hunderte anderer Regelungen und Mechanismen haben sich entwickeln können und beeinträchtigen das Funktionieren des freien Marktes. Hinzu kommt dass die Vereinbarungen im GATT bisher nur auf den Austausch von Waren beschränkt waren. Bisher gibt es keine gleichartigen multilateralen Abreden über Schlüsselbereiche wie Dienstleistungen und Direktinvestitionen. In diesen Bereichen muss jedoch etwas geschehen.

Die derzeitige Administration in den Vereinigten Staaten glaubt, dass es nötig ist, die Instrumente deutlich zu machen und zu stärken, die dem Präsidenten zur Verfügung stehen, um Chancengleichheit und Marktzugang für amerikanische Unternehmen im Ausland sicherzustellen. Zu solchem Instrumentarium gehört erstens ein Kongressmandat an den Präsidenten zur Erreichung grosserer Bereitschaft der Handelspartner zur Zusammenarbeit in den

genannten Bereichen Dienstleistungen und Investitionen. Es muss deutlich werden, dass die USA den Wunsch und festen Willen haben, die hier bestehenden Beschränkungen bei sich und anderen abzubauen. Zweitens könnte die Administration bereit sein, neue gesetzliche Vollmachten zu suchen, um Beschwerden über ungleichen und unzureichenden Marktzugang nachgehen zu können. Die Definition entsprechender Vollmacht wäre selbstverständlich schwierig. Die Möglichkeiten des Präsidenten, sich einzuschalten, wenn es zu Handelsverwerfungen kommt, wären jedoch grösser. Solche Vollmachten dürften allerdings nicht darauf hinauslaufen, kleinlich ausbalancierte Austauschbilanzen in einzelnen Warensektoren zu erreichen. Auch sollte kein Schritt in Richtung auf eine sektorale "reciprocity" unternommen werden. Allerdings muss klarer als bisher, dass das, was bisher an Chancengleichheit erreicht worden ist, unzureichend ist.

Aber auch in den Vereinigten Staaten selbst gibt es Probleme. Es gibt Entwicklungen, die den freien Handel beeinträchtigen könnten. Hier ist die "local content"—Gesetzgebung zu nennen. Dabei handelt es sich um ein Gesetzeswerk, mit dessen Hilfe sichergestellt werden soll, dass Autos, die in den Vereinigten Staaten verkauft werden, zu einem bestimmten Prozentsatz heimische Teile und Arbeitsleistung enthalten—im vorliegenden Fall 90% bis zum Jahr 1985. Befürworter behaupten, eine solche Regelung könnte 868.000 neue Arbeitsplätze bewirken und darüber hinaus die Autoindustrie und die gesamte Wirtschaft in USA wieder in Fahrt bringen. Eine interministerielle Untersuchung des Handelsministeriums in Washington hat jedoch folgendes ergeben: Selbst wenn sich der Autoabsatz in den Vereinigten Staaten bis 1985 verdoppeln würde, würden die "local content"—

Gesetze allenfalls 200,000 neue Jobs bewirken. Das wurde aber auf Kosten anderer Berufsbereiche gehen. Die Verteiler- und Transportnetze fuer Importautos innerhalb der USA muessen Personal entlassen. Autohaendler muessen schliessen, Hafenarbeiter, die jetzt Autos abladen, wurden beschaeftigungslos, bestehende Montagebetriebe in USA fuer auslaendische Fahrzeuge muessen geschlossen werden. Damit aber nicht genug. Der amerikanische Verbraucher wuerde ungefaehr 10% mehr pro Neuwagen zahlen muessen, oder etwa 1,000 Dollar nach heutigen Preisen fuer ein Durchschnittsauto. Auf den Index der Verbraucherpreise generell wuerde sich das mit 0, 3% auswirken. Ein weiterer Punkt ist, dass US-Autohersteller nicht mehr die Moeglichkeit haetten, ihre Vorwaren zu den guenstigsten Preisen und in der hoechsten Qualitaet einzukaufen. Auf die Regierung wuerden enorme Verwaltungslasten zukommen, da in jedem Fall zu dokumentieren waere, wo die 15,000 Teile herkommen, aus denen heute ein Auto besteht. Ausserdem wuerde der Wettbewerbsdruck just in dem Moment von den amerikanischen Autoherstellern genommen, in dem sie sich anstrengen, konkurrenzfaehiger zu werden und in zunehmendem Masse auf den internationalen Automaerkten der Welt mitzuhalten. Dazu kommt, dass "local content"-Gesetze nicht mit den GATT-Regeln in Einklang zu bringen waeren. Sollten solche Gesetze kommen, wuerden die anderen GATT-Mitgliedsstaaten wahrscheinlich Kompensation verlangen. Und wie wuerde Amerika dastehen, wenn es von anderen die Einhaltung der GATT-Regeln verlangt und sich selbst groeblich darueber hinwegsetzt!

Die US-Regierung steht mit ihren Handelspartnern im Gesprach, um mehr Chancengleichheit und Freizuegigkeit zu erreichen. Insbesondere mit Japan und der Europaeischen Gemeinschaft wurden und werden Vereinbarungen getroffen. Es gibt auch erste Erfolge. Japan ist dabei, seine Importrestriktionen gegen US-Produkte abzubauen, und die EWG hat ein Stahlabkommen abgeschlossen. Diese Erfolge wuerden durch eine "local content"-Gesetzgebung gefaehrdet, wenn nicht sogar zunichte gemacht werden. Es koennte zu Vergeltungsmassnahmen kommen, die dann in den Bereichen Landwirtschaft, Flugzeugbau, Computerherstellung, elektronischer Ausruestungen und einer Vielzahl anderer Produkte sehr spuerbar werden koennten. Jeder siebte Arbeitsplatz in USA ist vom Export abhaengig. Mit einer "local content"-Gesetzgebung wuerde man mehr verlieren als gewinnen.

Handelspolitik und Stahlindustrie lautet das zweite Stichwort des Verfassers. Die

amerikanische Stahlindustrie befindet sich in einem tiefen Umstrukturierungsprozess. Um diesen Prozess zu flankieren, wenn nicht sogar zu ermöglichen, hat die Regierung eine Reihe von Schritten unternommen, um die Steuerlasten zu erleichtern und unfairen Wettbewerb zu unterbinden. Diese Umstrukturierung kann sich erst langfristig positiv auf die Situation der Stahlindustrie auswirken. Kurzfristig wird es darauf ankommen, wie sich die Wirtschaft generell erholt. Insbesondere Konjunkturschuebe in den Bereichen Automobilbau, Bauwirtschaft und Maschinenindustrie koennten direkte Wachstumsanstoesse in der Stahlindustrie bringen. Die genannten Konjunkturschuebe wiederum haengen weitgehend auch von der Zinssituation ab.

Das Wohlergehen der amerikanischen Stahlindustrie haengt auch von der Faehigkeit ab, sich neuen Situationen anzupassen und auf neue Maerkte einzustellen. Seit Mitte 1975 geht der Weltstahlbedarf zurueck, gleichzeitig wachsen die Kapazitaeten, insbesondere in Entwicklungslaendern, an. Das Ergebnis sind hohe Ueberkapazitaet und ein hartes Ringen um die Maerkte. Mit Wachstum ist kaum noch zu rechnen, es duerfte sich auf lange Sicht auf etwa 1% pro Jahr belaufen, auch wenn sporadische Wachstumsphasen nicht ausgeschlossen sind. Hinzu kommt, dass neue Produkte und Technologien den Stahlbedarf eingeschaenkt haben. Ausserdem sind die Staehlerzeugnisse selbst an Festigkeit und Vielseitigkeit derart verbessert worden, dass immer geringere Mengen noetig waren, um einen bestimmten Zweck zu erfuellen. Dies laesst sich am Beispiel wie folgt erlaeuern: Die Durchschnittsstahlmenge fuer ein US-Auto betrug 1975 2,100 US-Pfund, 1981 waren es nur noch 1,600 US-Pfund. Schliesslich ist es zur Entwicklung einer Reihe ganz neuer nichtmetallischer Stoffe gekommen, die in einer Reihe von klassischen Anwendungsbereichen des Stahls nunmehr eingesetzt werden. Man denke beispielsweise an den Siegeszug der Plastikverpackung dort, wo man Jahrzehnte an Metallumhuellungen gewohnt war.

Die Industrie reagiert auf die gewaehrte Entlastung. Sie hat Investitionsplaene im Wert von 5 Milliarden Dollar angekuendigt, um die amerikanische Stahlproduktion zu modernisieren. Ohne Regierungsbeistand waere das nicht moeglich. Die degressive Abschreibung, wie sie im Economic Recovery Tax Act von 1981 eingefuehrt wurde, machte die Freistellung von Kapital fuer Investitionen moeglich. Erleichterungen bei der Einkommenssteuer, die zu erhoehten Sparleistungen fuehren, verstaerkten den Kapitalmarkt. Diese Massnahmen koennen dazu beitragen, die

Stahlindustrie und ihre Abnehmerindustrien zu entlasten. Weiterhin hat die Regierung Entlastungen bei der Umweltschutzgesetzgebung durchgesetzt. Bestimmte Fristen wurden veraengert, um der Stahlindustrie die Anpassung an neue Standards und die Modernisierung der bestehenden Anlagen zu erleichtern.

Die Regierungsmassnahmen innerhalb der USA zur Stuetzung der Stahlindustrie reichen jedoch nicht aus, die kritische Situation zu verbessern: auch in Europa muss etwas unternommen werden, um Kapazitaeten nach unten anzupassen und Stuetzungen abzubauen. Dabei muss man sich ueber die Schwierigkeiten in Europa im klaren sein. In einer Reihe von Laendern dort ist die Durchsetzung von Strukturveraenderungen mit erheblichen politischen und sozialen Risiken verbunden, die sich auf Regierungen und Wirtschaften auswirken koennen. Die Europaeer haben eine Reihe von Schritten in die richtige Richtung unternommen, das Ende ihrer Stuetzungsaktionen fuer die Stahlindustrie ist fuer 1985 vorgesehen. In der Zwischenzeit koennen die USA jedoch nicht zulassen, dass ihre Stahlindustrie nur deswegen Schaden nimmt, weil auslaendische Regierungen ihrer Industrie beistehen.

Die USA sind entschlossen, die heimischen Produzenten vor schaedigendem Importwettbewerb zu schuetzen. Als 1981 die Stahlimporte, insbesondere aus Europa, scharf anstiegen und die damaligen Stahl-Trigger-Preise in USA offen unterlaufen wurden, leitete die amerikanische Seite (im November) eine Reihe von Untersuchungen ein, ob der US-Industrie eine Schaedigung drohe. Am 11. Januar 1982 erhoben sieben amerikanische Stahlfabrikanten Antidumping-Klagen und Countervailing-Duty-Beschwerden zu neun Produkten aus elf Laendern. Sofort wurde das Trigger-Preis-System fallengelassen. Die freigewordenen Mitarbeiter hatten sich mit den neuen Klagen zu befassen.

Handelspolitik gegenueber dem Osten ist der dritte Aspekt, unter dem der Verfasser sein Thema beleuchtet. Amerikanische Wirtschaftssanktionen haben den Zweck, die wirtschaftlichen Beziehungen in dem betroffenen Land den jeweiligen politischen und oekonomischen Realitaeten anzupassen. Der Handelsaustausch soll nicht voellig abgeschnitten werden. Es ist aber nicht einzusehen, warum westliche Regierungen die militaerisch-industrielle Aufruestung beim potentiellen Gegner und damit seine Faehigkeit zum Eingreifen in fremden Laendern in irgendeiner Weise stuetzen sollen.

Zum Beispiel Polen laesst sich sagen, dass die Sanktionen verdeutlichen sollten, dass die USA das Vorgehen der polnischen

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Regierung nicht billigten und dass ihnen das Wohlergehen der dortigen Bevölkerung nicht gleichgültig ist. Teil der entsprechenden Sanktionen war die Verweigerung neuer Linien der Eximbank fuer die Exportkreditversicherung und die Ablehnung einer Umschuldung der amerikanischen Forderungen an Polen. Die Vereinigten Staaten haben allerdings nicht getan, was viele von ihnen verlangten, naemlich Polen in aller Form fuer zahlungsunfaehig erklart. Dieser Schritt erlaubt die Aufrechterhaltung eines gewissen Drucks auf Polen und indirekt auf die Sowjetunion. Die Verzögerungserklärung kann immer noch kommen, vorerst ist sie jedoch nur ein staerkeres Mittel im Hintergrund. Dennoch wollen die USA dem polnischen Volk helfen, wollen dessen Noete lindern. Sie unterstuetzen daher private Hilfsorganisationen, die Lebensmittel, Medikamente und andere notwendige Gueter direkt an das Volk verteilen. Zur Loesung der wirtschaftlichen Probleme Polens muss die dortige Regierung das Volk um Mitarbeit ersuchen. Ohne das muss jeder Konjunkturplan erfolglos bleiben. Es waere daher unsinnig, an irgendeinem wirtschaftlichen Aufbauplan dort mitzuwirken, der nicht die Unterstuetzung der Bevölkerung genießt.

Osteuropa wird von USA aus nicht als geschlossener Block gesehen. Die amerika-

nische Politik unterscheidet zwischen den Laendern dieser Region, auch wenn die jeweiligen Beziehungen zur Sowjetunion nicht uebersehen werden. USA gestaltet seine bilateralen Beziehungen zu jedem der Laender Osteuropas entsprechend dem dortigen Interesse an solchen Beziehungen und dem dortigen Verstaendnis fuer die amerikanischen Interessen.

Die Beziehungen der USA zu Rumänien sind gut. Man unterstuetzt Rumäniens Bemuehungen um eine eigene Aussen- und Wirtschaftspolitik. Es gibt eine Reihe von Handelskontrakten. Wenn gewisse Kredite verweigert wurden, so hatte das keine politischen Gruende, sondern rein wirtschaftliche, die auf der finanziellen Situation Rumäniens beruhen. Die Gewaehrung neuer Kredite zu einem Zeitpunkt, zu dem ueber die Umschuldung bestehender Forderungen gesprochen wird, kompliziert die Dinge nur unnoetig. Als Mitglied des Internationalen Waehrungsfonds hat Rumänien Zugang zu wirtschaftlichem Rat und finanzieller Hilfe. Die USA hoffen, dass Rumäniens Probleme voruebergewendiger Natur sein werden und dass die engen Wirtschaftsbeziehungen ihren Fortgang finden koennen.

Die Wirtschaftsbeziehungen zu Ungarn sind gesund seit Rueckgabe der Stephanskronen, und seit Ausdehnung des Welttextil-

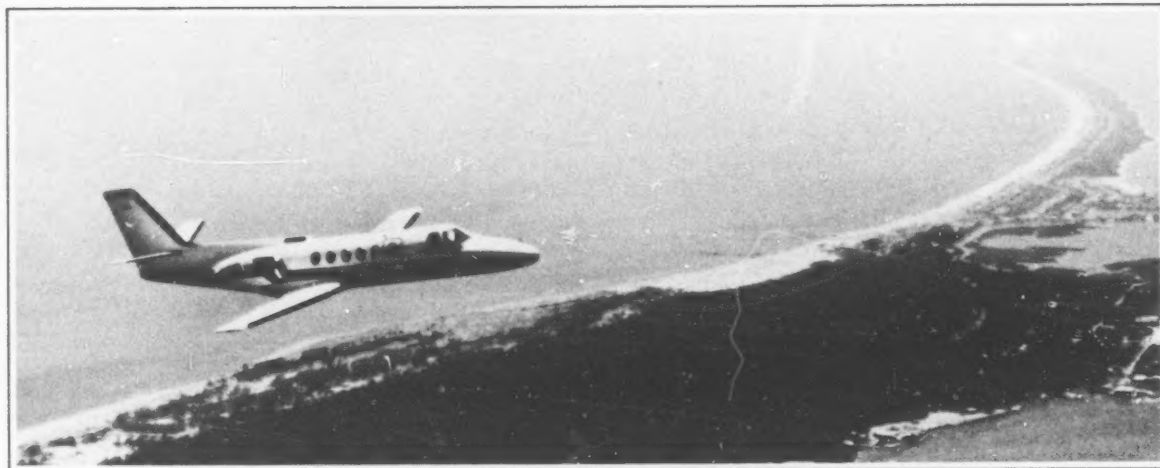
abkommens hat sich der Handel ausgeweitet. Es gab gegenseitige Direktinvestitionen in beiden Laendern. Ungarn hat sich bewusst um die Reform seiner Wirtschaft bemueht, um die Erhaltung finanzieller Stabilitaet und um die aktive Mitarbeit in internationalen wirtschaftlichen Gremien. Die Bemuehungen um den Beitritt zum Internationalen Waehrungsfonds waren ein weiterer Schritt in diese Richtung. Diese Anstrengungen werden in USA begruessert, und man hofft auf gute wirtschaftliche Beziehungen auch in der Zukunft.

Bescheidenere Fortschritte gab es gegenueber den drei europaeischen Laendern, mit denen die USA keine Handelsabkommen haben: Bulgarien, Tschechoslowakei und Deutsche Demokratische Republik. Die USA bemuehen sich um eine Ausweitung ihrer Handelsbeziehungen innerhalb des bestehenden Rahmens.

Man ist offen gegenueber Initiativen, die von dort zur Staerkerung der wirtschaftlichen und kommerziellen Kontakte kommen soll.

Die US-Politik gegenueber dem Osten ist klar. Man will die Ausweitung eines friedlichen Handelsaustausches zum beiderseitigen Vorteil. Dies gilt gegenueber allen Laendern, die zur Gegenseitigkeit, Reziprozitaet, bereit sind und zur Respektierung der amerikanischen Interessen.

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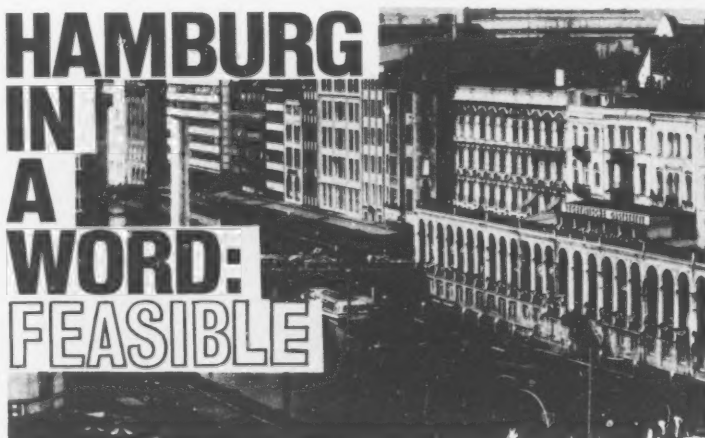
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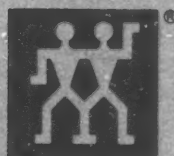
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AMERICAN BARMAG CORPORATION, a wholly-owned subsidiary of Barmag, Barmer Maschinenfabrik A.G. in Remscheid-Lennep, West Germany, was founded in August, 1965 in Charlotte, North Carolina. Since then Barmag has achieved a remarkable position in the textile and plastics business through its efficient sales and service organization in the United States and Canada.

Its parent company, Barmag in Remscheid-Lennep, was founded in 1922 as a small machine manufacturing company building machinery for the then evolving rayon industry. Through time, the production program underwent constant expansion. When the production of polyamide and polyester fibers was begun—in the late 1940's—Barmag started to design and build machines for the production and the processing of these new man-made fibers, and thus opened new markets.

Today, an almost complete production program of machines ranging from spinning extruders through spinning mill equipment, and draw-texturing machines to twistors. Barmag is the only machine manufacturer in the world that offers such a complete line of machines featuring the most modern design, perfect engineering and the latest technologies in the field of man-made fibers.

Continuous research and development, the expansion of the production program, as well as increased worldwide sales activities have led to an unusually strong rate of growth since the beginning of the 1980's.

The high technological standard in the development of texturing machines permitted the introduction of the draw-texturing process on a broad industrial scale. With draw-texturing in the background, Barmag's heavy-duty spinning take-up machines reached a dominant market position. Barmag also introduced the conversion from conventional spinning to high-speed spinning, especially in the production of polyester and nylon.

Barmag supplies spinning lines pre-assembled to container dimensions, adapted to the specific requirements of customers.

Improved technologies become especially visible with Barmag's inline spin-draw texturing process for carpet yarns and new staple fiber processes. Representative of the successful incorporation of new products is the manufacturing program for blown film, film strip and fiber lines for plastic, as well as a line of gear pumps and a new program for the production of hydraulic lifts and load-independent proportional valves.



AMERICAN HOECHST CORPORATION, headquartered in Somerville, N.J., achieved sales of \$1.6 billion in 1981—a giant leap from the \$1 million sales in 1953 when the firm started business in the U.S.A.

The diversified chemicals, plastics and pharmaceutical producer doubled its sales in the last five years—a feat few other American chemical companies have achieved in that period.

Hoechst-Roussel Pharmaceuticals Inc., a subsidiary, markets Lasix®, (furosemide), a diuretic, one of the ten most prescribed drugs in the country; Claforan®, one of the newest antibiotics; and Streptase®, (streptokinase) which has been called a major breakthrough in treating heart attack victims. In addition, Hoechst-Roussel has approximately 25 other new drugs in various stages of investigation.

Hoechst Fibers Industries Division, producer of Trevira polyester fibers, is one of the largest producers in the country.

The Petrochemicals Division is a major producer of styrene monomer and high density polyethylene to the plastics industry.

The Plastics Division is one of the few suppliers of six different plastics in the country, including polystyrene, high density polyethylene, nylon 6, ultrahigh molecular weight high density polyethylene and PTFE (used to coat metals to prevent sticking).

The Film Division markets rigid polyvinyl chloride film and sheet, polyester film, polypropylene sheet, polarized film laminates and thermoformed containers.

The Industrial Chemicals Division supplies a wide range of organic and inorganic chemicals and intermediates, dyes for natural and man-made fibers, pigments, textile chemicals, specialty chemicals, waxes, lubricants, resins, and plastic additives.

The Technical Information Systems Division is one of the largest manufacturers of presensitized offset printing plates in the country. It also markets photo-resists for the electronics industry, and laser platemaking equipment for the graphic arts industry.

The Agricultural Division supplies products for crop protection including Hoelon® 3EC pesticide, and Compleasal(R) fertilizer.

The Animal Health Division provides pharmaceuticals for animals' health including Panacur(R) for horses, and Flavomycin(R) (bambermycins) the only antibiotic designed for the exclusive use in farm animals to promote growth.

Calbiochem-Behring, another unit, markets diagnostic reagents and research biochemicals.

AGFA-GEVAERT

AGFA-GEVAERT, INC., headquartered in Teterboro, N.J., is the American subsidiary of Europe's largest photographic enterprise, the Agfa-Gevaert Group. Since 1964, when the two European companies Gevaert Photo-Production NV (Belgium) and Agfa AG (West Germany) merged, the firm has been a leader in the photographic field.

Marketing over 3,100 products, Agfa-Gevaert manufactures: films, processing chemicals and equipment for the graphic arts field; B&W and color films, cameras, B&W and color papers and photo-finishing equipment for the consumer/professional line; medical and industrial X-ray films; motion picture film; microfilm; and magnetic (audio and visual) recording tape.

Agfa-Gevaert has sales and distribution branches nationwide and offers varied training programs to both customers and dealers. With special emphasis on service and technical training, Agfa-Gevaert has established a solid reputation throughout the world.



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HORST F.G. ANGERMANN

"Clearance Sale in Germany" was a well-known slogan approximately 20 years ago and also came to be the title of a book by the editor of Spiegel Magazine, Mr. Kurt Blauhorn. This slogan was a result of the fact that great numbers of German firms were being purchased by U.S. companies. HORST F.G. ANGERMANN often acted as their intermediary.

The Horst F.G. Angermann Company, was well established in 1954 as a specialist in handling the sales of companies and company shares. Since then, the Angermann organization has added a number of other services, still specializing in handling the needs of small to middle sized companies.

The first additional services provided were as commercial and industrial real estate brokers. Specifically, Angermann services are tailored to fit the real estate needs of industry and trade.

The Plant and Equipment Department brokers machinery, fixtures and furnishings, all related to industry. Angermann specializes in conducting international auctions of entire factories and equipment.

In addition to its various brokerage and sales activities, the Horst F.G. Angermann Company has for many years been offering management consulting services, within the scope of the "Business Economic Department". Important strength of the services provided include appraisals of entire enterprises or real estate, situation analysis, and an expertise in reconstructing of companies which have various economic problems.

The main activity of the Angermann Group today is still its merger and acquisition services. As compared to the situation of 20 years ago, the direction of international transactions has changed considerably. Today not only major German companies, but also many smaller companies are interested in investing in the U.S. This is the basic reason why Angermann Incorporated, headquartered in Los Angeles, has become the newest member of the Angermann Group. In addition to offering merger and acquisition and commercial and industrial real estate brokerage services, Angermann Incorporated also offers the other services of the Angermann Group within the U.S.A.

The Angermann organization today includes the following companies and groups:

- Horst F.G. Angermann GmbH, Hamburg. Departments include merger and acquisition, real estate operations, as well as the plant and equipment group.
- International Auctioneer Horst F.G.

Angermann, Hamburg, which conducts industrial auctions.

- Angermann Consult GmbH, Hamburg, management consultants.
- Angermann Incorporated, Los Angeles, all services.

ARTHUR ANDERSEN & CO.

SOCIETE COOPERATIVE

ARTHUR ANDERSEN & CO. is one of the largest international accounting firms, providing a full range of professional services in accounting and auditing matters, tax compliance and planning, and management information consulting to more than 75,000 clients.

Since its founding in 1913, Arthur Andersen & Co. has had as its guiding principle the assurance that all partners have a similar interest in servicing the firm's clients everywhere in the world. In keeping with this tradition, the firm in 1978 created a Societe Cooperative, domiciled in Geneva, Switzerland, to coordinate its worldwide services. This S.C., which is controlled by all partners in the firm's practice offices, assures consistently high quality of professional practices and standards of client service.

To fulfill its commitment to excellence, the firm has established and maintains an intricate communications network which provides for rapid sharing of new information and recent experiences and facilitates consultation and research.

Continuing professional training and development are emphasized, using the most modern facilities and techniques available. In addition, the quality of performance and service is effectively monitored through a world-wide quality assurance program.

Accounting and Auditing—Arthur Andersen & Co. has always taken a business approach to its audit assignments and accounting services. All its professional personnel are trained first to develop an understanding of the client's business and operating objectives. Recommendations regarding management systems are developed within this framework. Combining this business approach with the one-firm concept, the firm renders specialized assistance in the accounting and financial aspects of seeking and evaluating potential acquisitions, locating plants and other facilities, and making other contractual relationships.

Tax Services—The firm's tax practice is conducted by the world's largest non-governmental body of full time tax profes-

sionals. Tax personnel in each office are totally familiar with local tax matters as well as important concepts of international tax planning and the intricacies of international tax treaties. Through its sharing of experience, its communications network and worldwide research facilities, the firm offers fully integrated tax advice on such matters as organization structure, cross-border trading, transnational acquisitions, mergers and other undertakings. Similarly it is well positioned to assist expatriates in their individual tax planning and compliance.

Management Information Consulting—For more than 35 years Arthur Andersen & Co. has helped clients meet their business information needs. The Management Information Consulting Division has grown into the largest international systems and consulting organization of its kind, with some 5,000 professionals in 40 countries. The division's professional personnel design and install information systems and conduct analytical studies to provide the information executives need to effectively plan, evaluate and control their financial, marketing, information processing and other operations.

Atlantic Capital Corporation

ATLANTIC CAPITAL CORPORATION, originally established in 1970, is a U.S. investment banking firm, wholly owned by Deutsche Bank AG. Atlantic Capital employs about 100 professionals and staff employees.

The corporate finance activities of Atlantic Capital include: the management of debt and equity public security offerings in the U.S. and international markets; the private placement of debt securities with U.S. and non-U.S. institutional investors; advising European companies in making acquisitions of U.S. companies; specialized corporate financings, such as tax-exempt Industrial Revenue Bonds and Pollution Control Bonds to finance plant and equipment in the U.S.; lease and currency hedge financing and financial advisory services, especially in connection with corporate acquisitions in the United States.

In the last five years Atlantic Capital has managed or co-managed well over 200 different transactions including U.S. private placements, public offerings, Industrial Revenue Bond offerings, Pollution Control financings, lease financing and Euro-bond financings. In addition, the firm served as a

financial advisor to numerous European companies which made acquisitions of U.S. public and privately owned corporations.

The underwriting activities of Atlantic Capital consist of participations in most domestic and international syndicates, formed for the distribution of securities. In 1981, Atlantic Capital participated in 310 public offerings, underwriting a total well in excess of 300 million dollars. These commitments were placed with financial institutions around the world.

The Stock Trading Department makes a market, trades as principal, and has an important agency order execution capability in American securities. In addition, the firm is a registered third market maker in approximately 120 U.S. stocks. The firm is a member of most regional exchanges.

The Bond Trading Department makes active markets in U.S. domestic debt securities with special emphasis on "Yankee Bonds" and "Eurobonds," dealing with a broad range of institutional investors, who are serviced by a special bond sales group.

The firm's Money Management Services cater to private and institutional clients desiring to have their assets managed and supervised in New York on a discretionary basis.

The International Department markets non-U.S. dollar instruments, especially those denominated in Deutsche Marks, to institutional clients who seek international portfolio diversification.



ATLANTIC CONTAINER LINE is an international company formed by six major European shipping companies to provide a developing through-transport service between Europe and North America.

In 1965 Atlantic Container Line was formed by three Swedish Companies—Wallenius (the world's largest sea carrier of motor cars), the Swedish American Line and the Transatlantic Steamship Company Limited—and the Holland America Line of Rotterdam. These companies were later joined by the French Compagnie Generale Transatlantique (CGT) and the British Cunard Steamship Company. Late in 1974 the Brostrom Group of Sweden acquired the transport division of Holland America Line. Their ACL share is now owned and managed by Intercontinental Transport (ICT) BV, Dutch subsidiary of the Brostrom Group. A further development occurred in 1976 when the three vessels of Care

Line—owned by CGT, SAL and Wallenius—became fully integrated into the ACL fleet.

The six companies of the group are: Compagnie Generale Maritime (CGM) (France); The Cunard Steamship Company Limited (United Kingdom); Intercontinental Transportation (ICT) BV (Netherlands); Swedish American Line (Sweden); The Transatlantic Steamship Company Limited (Sweden); and Walleniusrederierna (Sweden). Atlantic Container Line was formed initially to enable these companies to meet together the high capital investment involved in building, operating and developing a fleet of roll-on/roll-off containerships on the North Atlantic.

The group owed much of its initial impetus to the Wallenius company which had conceived the idea of building a fleet of large and fast roll-on/roll-off cargo and car carriers for transatlantic service. When Atlantic Container Line was formed, a technical committee with representatives from all participating companies was organized to deal with the construction of ACL vessels.

While containerization would form an important part of the Atlantic Container Line service, it was recognized from the start that shippers would need cargo handling and carrying capacity for goods that could not be containerized, or for goods that could be handled better and less expensively by not being containerized. The company's purpose in developing a combined roll-on/roll-off container fleet was to provide a fast, efficient and economically attractive general cargo service that includes motor cars.

ACL first introduced Ro/Ro to the U.S.-North Atlantic trade in 1967. It currently operates ten fast modern Ro/Ro container ships direct from the U.S. east coast to eight major ports in the United Kingdom, France, the Netherlands, Belgium, West Germany and Scandinavia. With rapid load and unload capabilities, ACL's vessels offer eight to twelve hour turn-around and three-times-a-week sailings from U.S. ports.



BMW OF NORTH AMERICA, INC.

Steadily increasing automobile sales and expansion into the motorcycle and marine engine markets have highlighted BMW of NORTH AMERICA's seven years as U.S. importing and marketing subsidiary of BAVARIAN MOTOR WORKS of Munich, West Germany.

Established in 1975 as U.S. importer of BMW automobiles, the company inherited

an annual sales rate of 15,000 units. By 1981, that had increased to 41,761, and 1982 car sales approached the 50,000 level.

With headquarters in Montvale, N.J., and regional sales offices in Los Angeles, Chicago, Dallas and Norwood, N.J., BMW supports nearly 400 retail dealers across the U.S. The company and its regional offices, parts distribution centers and training facilities employ 517 people.

BMW's 1982 automobiles include the new 528e, a four-door luxury sedan featuring high performance and state-of-the-art engineering and electronics for optimal fuel efficiency. The top-selling 320i two-door sports sedan, the 633CSi coupe and 733i luxury sedan complete the range. Prices of BMW automobiles range from \$13,290 for the 320i to \$36,995 for the 633CSi.

In 1979, the company set up its Marine Department and began marketing the BMW line of quality marine engines, ranging from small diesel auxiliaries to diesel and gasoline inboard and stern-drive units of up to 220 horsepower.

In October of 1980, BMW of North America became U.S. importer of the legendary BMW motorcycles. The seven models range in size from 650cc to 1000cc and are sold through a nationwide network of 238 dealers.

A line of high-quality activewear and gift merchandise is sold by BMW automobile dealers through the company's Lifestyle Products Department.

John A. Cook has served as the company's president since its establishment.

BfG Bank für Gemeinwirtschaft

BANK für GEMEINWIRTSCHAFT (BfG), with its headquarters in Frankfurt/-Main, is one of Germany's major credit institutions. With a total staff of approximately 8,000, the bank offers its services at over 250 branches and agencies in all important towns and cities in the Federal Republic and West Berlin. BfG's principal shareholder is, with 99.5%, the Beteiligungsgesellschaft für Gemeinwirtschaft AG (BGAG). Bank für Arbeit und Wirtschaft AG, Vienna, Austria, holds the remaining token amount of shares. The holding company BGAG was established in 1974, and all of its share capital is held by the German Trade Unions' Federation and its individual member unions.

BfG has been very successful with its concept of operation as an all-purpose bank offering a wide range of services. Its total assets were DM 45.6 billion at the end of

1981, while total assets of the BfG Group amounted to DM 57.5 billion. Customer deposits totalled DM 22.7 billion, with lending to customers amounting to DM 23.6 billion. The bank makes loans available to all sectors of the economy and includes among its borrowers public authorities as well as private households and enterprises from all branches of trade and industry. The bank's special project loans of up to DM 1,000,000 with a maximum term of 15 years are designed for small and medium-sized enterprises for various types of capital projects.

1981 saw also borrowers abroad making wide use of the credit facilities provided by BfG, whose international business is enhanced by the activities of its branches in London, New York, Cayman Island and Hong Kong, as well as its representative office in Sao Paulo. BfG's other footholds abroad include two wholly-owned subsidiaries: BfG: Luxembourg S.A. and BfG: Finance Asia Limited, Hong Kong. The bank also has holdings in the International Cooperative Bank Co. Ltd., Basle; Hollandse Koopmansbank N.V., Amsterdam; and Israel Continental Bank Ltd., Tel Aviv.

BANKAMERICA INTERNATIONAL

As a holding company, BANK-AMERICA CORPORATION represents one of the world's largest privately owned financial institutions, with assets of well over \$100 billion. Its main operating unit is Bank of America NT & SA, headquartered in San Francisco. Through a network of branches, representative offices, subsidiaries and affiliates in about 100 countries, Bank of America offers a wide spectrum of banking services to individual and corporate clients, as well as to financial and government institutions around the world.

Since Bank of America's establishment in 1904, its history and development have been clearly connected to Europe. The first international branch was opened in London in 1931, with Duesseldorf to follow in 1950. Today the bank is well represented in Germany, with 5 offices of Bank of America NT & SA and over 20 branches of its commercial bank subsidiary, Bankhaus Centrale Credit AG, in key locations. Frankfurt is the administrative head office for Germany.

In the U.S., Bank of America serves its international clients principally through corporate offices in New York, San Francisco, Los Angeles, Chicago, Atlanta, Seattle, Cleveland, St. Louis, Boston, Houston

and Minneapolis. In addition, BankAmerica International has branches throughout the country. The New York branch of BankAmerica International has been active in international banking since its inception in 1950 and is America's largest and longest-standing Edge Act Bank. Its highly efficient clearing system has established BankAmerica International as a leader in the market among both corporate and correspondent clients. Last but not least, a network of branches of Bank of America NT & SA offers local banking services statewide in California. What's more, specialized subsidiaries and affiliates of BankAmerica Corporation engage in activities such as merchant and investment banking, leasing, consumer and inventory finance, mortgage, securities and trust services.

Foreign investments in the U.S. have grown rapidly over the last few years. To respond to the special requirements of foreign corporations operating in the U.S., Bank of America has established the Direct Foreign Investment (DFI) Section at its New York Corporate Office. The DFI team, consisting of officers experienced in U.S. and European financial markets, is the principal U.S. contact for multinational corporations seeking to expand their U.S. activities. In addition to providing basic banking services, the DFI team arranges for acquisition and capital expenditure advising and financing, private placements, tax-exempt industrial revenue bonds, leasing, working capital loans, foreign exchange, cash management and treasury consulting services.

For more information, contact: E.M. Hawkins, Vice President, Direct Foreign Investment Section, 299 Park Avenue, New York. Tele: (212) 486-3099.



Bankers Trust Company was founded in 1903 as a trust company and over the years has developed into the country's eighth largest commercial bank.

In 1978, Bankers Trust adopted a new corporate strategy which emphasized the bank's relationship with corporations, financial institutions, governments and certain individuals worldwide. As part of this strategy to focus on wholesale banking, Bankers Trust Company sold more than 80 of its consumer branches but will retain a core group of 15 offices in New York City.

The bank's involvement in international banking began in 1920 when it opened a

branch office in Paris, and two years later the London office was opened. Bankers Trust Company now has branches in London, Paris, Madrid, Milan, Birmingham, Jersey, Manila, Manama, Nassau, Panama City, Seoul, Singapore, Hong Kong, Taipei and Tokyo and affiliates and representative offices in more than 30 countries. It also has offices in Los Angeles, San Francisco, Houston, Dallas, Chicago and Miami. Bankers Trust Company is a member of Bankers Trust New York Corporation, whose assets total over \$35 billion.



BAYERISCHE HYPOTHEKEN-UND WECHSEL-BANK AG was established in 1835 in Munich by royal decree of King Ludwig I of Bavaria. HYPO-BANK is Germany's oldest publicly quoted bank and one of the largest with consolidated assets of more than DM 89 billion.

HYPO-BANK is engaged in both commercial and mortgage banking, operates the largest branch network in southern Germany, and is also active nationwide in key centers such as Frankfurt, Hamburg, Hannover, Duesseldorf, Stuttgart and Berlin.

Through its wholesale full-service branches in New York, Cayman Islands and London, its wholly-owned subsidiary in Luxembourg, representative offices in Brazil, Hong Kong, Italy, Mexico, South Africa, Spain and the United Arab Emirates, affiliates and its partnership in ABECOR, the biggest banking association of its kind in the world, HYPO-BANK offers services around the globe. And via its affiliation with ABD Securities, New York, the Bank's customers have direct access to the U.S. securities market.

For more information and a copy of our Annual Report, please contact the International Department, A/PL, Theatinerstrasse 11, D-8000 Munich 2, Tel: (089) 2366-11, Telex: 5 2865 25-27.

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Size: Among the top 5 banks in Germany, with a balance sheet total of more than DM 90 billion.

Service spectrum: Commercial and investment banking embracing the full gamut of domestic and international financial services.

Central Office: Munich, West Germany; **New York Branch:** 111, East 50th Street, New York, N.Y. 10022, Telephone: (212) 310-9800, Telex: 661722 bayland ny.

Further international presence: London and Singapore—full-service branches; Luxembourg—wholly-owned subsidiary (Bayernlux); Johannesburg, Toronto, Vienna—representative offices.

Bayerische Landesbank traces its beginnings to the nineteenth century with the establishment of a state financial institution (Landesbodenkreditanstalt) whose primary function was public-sector financing within Bavaria. With the emergence of the Sparkassen another major bank was founded—Bayerische Gemeindebank—which served as central banker and liquidity manager for the regional Sparkassen. In time, Bayerische Gemeindebank developed into a full-fledged commercial bank. These financial institutions were the mainsprings for further expansion into all banking areas after the two institutions merged to form Bayerische Landesbank Girozentrale in 1972.

The founder-owners of Bayerische Landesbank were the State of Bavaria and the regional Sparkassen, which are the sole shareholders and guarantors. As a unit bank, with only one domestic branch in Nuremberg, it is equipped to provide the full range of domestic and international banking services.

The Bank's main activities are structured into six separate banking functions: commercial banking, investment banking, issuing activities, central banker to Bavaria and its municipalities, central bank for Bavaria's Sparkassen, Building and Loan Association.

Bayerische Landesbank also has successfully expanded its own worldwide banking facilities, achieving an ever more important position in global financing for both corporate and public-sector clients. The range of international services includes: international payments (SWIFT) and documentary business, trade financing, buyers credits, foreign exchange services, Eurofinance, syndication of international loans, managing of bond issues, private placements, and SD Certificates, securities trading, investment advisory services, dealing in precious metals, etc.



BAYERISCHE VEREINSBANK AKTIENGESellschaft
BAYERISCHE VEREINSBANK AKTIENGESellschaft, known in the U.S. as Union Bank of Bavaria, incorporated in Munich as a commercial bank in 1869 and merged with Bayerische Staatsbank (founded 1780), today ranks fourth among the largest private-sector banks in Germany. Together with its mortgage subsidiaries, Bayerische Vereinsbank is the largest private-sector, long-term banking group in Germany. As of June 30, 1982, the bank had a staff of 11,214 employees. Its consolidated balance sheet showed total assets of DM 98.4 billion.

As one of the few banks specializing in both the credit and mortgage fields, BV is an especially versatile financing institution. Headquartered in Munich, BV has branches in the German banking capital of Frankfurt as well as Duesseldorf, Stuttgart and Berlin. Its corporate business is conducted throughout its 420 branches which are located mainly in southern Germany. Bayerische Vereinsbank also holds interests in several well-known private banks in West Germany.

The expansion and diversification of its international business and branch network has followed the continued growth of Germany's international trading relations. The bank maintains foreign branches in Atlanta, Chicago, Cleveland, Grand Cayman, Los Angeles, New York (all operating under the name Union Bank of Bavaria), London and Tokyo. Representative offices are in Athens, Caracas, Hong Kong, Tokyo, Johannesburg, Manama/Bahrain, Paris, Rio de Janeiro, Tehran and Milano. BV has enhanced its presence in the United States by establishing First Bavarian Capital Corporation, an investment banking affiliate in New York.

Bayerische Vereinsbank provides comprehensive banking services to individual and numerous corporate customers—amongst them several American corporations. Corporate loans are made in Deutsche marks and in principal Eurocurrencies, notably U.S. dollars. International banking services include the financing of German external trade and projects in other European countries and overseas. Bayerische Vereinsbank is also engaged in extensive securities and investment banking operations. The mortgage business of the bank companies comprises both long-term loans to individuals and corporations and loans to or guaranteed by authorities in the Federal Republic of Germany. Both of these types of loans are financed by the bank through the issuance of bonds in the German capital market.



BECKER OF NORTH AMERICA, INC. operates the nationwide service network for Becker radios factory installed in leading brands of imported European automobiles. In addition, Becker of North America imports the products made by Becker Autoradiowerke und Becker Flugfunkwerke of Germany for the United States and Canada.

The companies are named after Max Egon Becker, who began building automobile radios in 1945 and aircraft radios approximately ten years later. Today, Becker products are found not only in automobiles and aircraft all over the world, but also in military applications, especially that used for search and rescue operations. Becker's commitment to safety in the air and on the road is also shown in its autoradio products which are designed to entertain with safety in mind.

The North American arm of Becker was started in 1968 under the name of Becker Electronics, Inc., located in South Hackensack, New Jersey.

Becker Electronics, Inc. changed its name to Becker of North America, Inc. when its original operations of service support for factory installed automobile radios were expanded to include import and distribution of all German made Becker products.

In January of 1982, Becker of North America, Inc. and Becker Avionics, Inc. moved to newly built headquarters in Upper Saddle River, New Jersey, in close proximity to most European automobile importers.



CHASE

As CHASE MANHATTAN expands its global network of over 200 facilities, it also strengthens its services to make them more timely and responsive to customers' needs.

In 1982, building on an already strong base in the merchant banking field, the bank formed Chase Manhattan Capital Markets (Holdings) Inc. This new subsidiary combines the worldwide efforts of our merchant banking group with our government and municipal securities dealing and finance units.

To help companies manage cash more effectively, Chase has developed—and is expanding upon—one of the most advanced global cash management packages available today. One of the key elements of the service is InfoCash, our electronic system for transmitting financial information and instructions. To date, there are over 1,500 corporate clients in the U.S. and more than 1,000 foreign banks using a Chase cash management product.

In the ever expanding area of world trade, we have 105 trade professionals in 24 countries and four U.S. cities to respond to the needs of our import/export customers.

Chase has long prided itself on the services it offers to the international business community, and the bank has specialized products and experts for corporate customers with worldwide presence. Our Global Specialized Industries, Global Industries and U.S. National Industries Groups offer a full range of banking services that are tailored to the needs of specific industries. Chase recognizes that a growing number of corporations not only compete in the international arena, but also produce, manufacture and assume market risks in an integrated international context.

The decade ahead will continue to challenge all financial institutions. Chase is well positioned to meet these challenges—and to continue to offer our customers full-scale, high quality banking services.

CHEMICAL

CHEMICAL BANK, with headquarters in New York City, is one of the world's leading financial institutions. Now 156 years old, it started life in 1824 as a subsidiary of the New York Chemical Manufacturing Company.

The growth of Chemical Bank has been most evident over the past fifty years. With the acquisition of the Corn Exchange Bank in 1954, Chemical Bank entered the retail banking business. In 1959 it merged with the New York Trust Company, thus broadening its trust facilities, which today are among the most outstanding in the country.

With the acquisition of the Security National Bank of Hempstead, Long Island, Chemical now has over 250 branches in the New York area.

In 1968, Chemical New York Corporation was formed as a holding company with Chemical Bank as its major asset. Today there are a number of domestic subsidiaries of the holding company including the Galbreath Mortgage Company and Sunamerica Corporation.

Chemical Bank's international business in all industrial and financial sectors has expanded considerably in recent years, and over \$17 billion of the Bank's \$39 billion in assets are now in the International Division. The expansion overseas, most of which has taken place since 1971, has resulted in the establishment of a network of branches, representative offices, subsidiaries and affiliates in major centers throughout the world, enabling Chemical Bank to assist its customers with whatever their needs may be. To further increase its international capabilities, Chemical Bank has a subsidiary in New York, Chemical International Financing Ltd., which is involved in equity financing outside the United States. C.I.F. also holds equity in a number of foreign banks, among them Breisach Pinschof Schoeller in Austria.

The Frankfurt branch office of Chemical Bank, which opened in the fall of 1969, now employs over 100 people and services an ever growing roster of German, U.S. and European companies.

CITIBANK

A subsidiary of Citicorp

CITICORP/CITIBANK: An Overview.

With assets of over \$115 billion and more than 2,200 domestic and overseas offices, Citicorp is one of the largest financial services institutions in the world. Its principal asset and subsidiary is Citibank, N.A., which offers banking services to individuals, private corporations, governments and financial institutions. Citibank, N.A. maintains nearly 250 overseas branches and has some 325 branches in its home state of New York, and is the second-largest privately owned commercial bank in the world.

Other Citicorp subsidiaries and affiliates engage in such activities as merchant and investment banking, credit card and residential mortgage services, consumer and industrial credit, international trade finance, the development of automated office systems, and the buying and selling of money market instruments.

Together with its subsidiaries and affil-

iates, Citicorp has \$72.1 billion in deposits and \$77.1 billion in loans outstanding (as of December 31, 1981). Total staff numbers approximately 58,000 with 30,000 in domestic locations and the remainder overseas.

Citibank opened its first overseas branch in 1914 in Buenos Aires—becoming the first U.S. national bank to branch directly abroad. Over the next four years, in addition to opening more branches of its own in South American cities, the bank acquired full ownership of the International Banking Corporation, which had established its first foreign branch in London in 1902. The resulting network of 21 overseas offices in 13 countries and territories made Citibank America's leading international bank.

After reaching a high-point in the early 1930s, the bank's international operations declined under pressure from a Depression and then a World War, after which it grew slowly until the late 1950s. At that point Citibank's senior management perceived significant new growth opportunities abroad, particularly in Europe, and instituted a program that by 1967 had expanded Citibank's overseas presence from 82 offices in 27 countries to 208 offices in 61 countries.

Throughout the late 1960s and 1970s, Citibank's foreign operations continued to grow rapidly, especially in the developing nations, and during the past few years, 70% or more of the corporation's earnings have come from abroad.

Since the mid-1970s Citibank has committed substantial resources to the expansion of staff, systems and marketing in its worldwide consumer businesses. In 1977, it unveiled its first "electronic" branch, and Citibank's network of more than 200 Citicard Banking Centers (with more than 480 card activated banking terminals) in the New York metropolitan area now handles nearly 70 million deposit, withdrawal and other transactions each year.

This planned expansion of consumer activities is part of Citicorp's long-term strategy for meeting the challenges of the 1980s.



For thousands of United States businessmen the regular trip to COLOGNE is a definite part of their company planning. They participate in the international trade fairs and trade exhibitions which are held

here in regular sequence. For them, as exhibitors or visitors this participation is an essential factor in their export-marketing, their buying decisions or their efforts to find business partners in other countries. This holds true not only for bilateral business relations between American and German companies, but also applies to business partners from the entire world.

Cologne is among the leading trade fair venues of the world. The program includes 25 international trade fairs and trade exhibits in important areas of consumer and capital goods industries which have been held regularly for years, in some cases for decades. The Cologne trade fairs include such sectors as food production and food supply, household appliances, housewares and hardware, sport, leisure time and hobbies—including photo, film and audiovisual equipment, gardening and camping equipment, bicycles and motorcycles as well as art, textiles, clothing and clothing machines, furniture, furniture manufacture and interior design as well as office planning and equipment.

These trade fairs, most of them accessible only to trade visitors, link the offers of roughly 21,000 exhibitors with the demands of more than one million buyers and interested parties from the entire world. A particularly important aspect is the true internationality of the Cologne trade fairs: on the average, every other exhibitor and every third visitor comes from abroad.

United States business participates regularly in these trade fairs, represented by vendors and buyers. With almost 800 exhibitor companies and roughly 4,000 trade visitors it represents one of the most important foreign participations on the Cologne trade fair grounds. During the last ten years the number of American exhibitors at the Cologne trade fairs doubled and the number of visitors from the United States increased by about 70%. In the case of eight Cologne trade fairs American exhibitors participated individually as well as in groups organized by American trade associations, government agencies and chambers of commerce.

The Cologne trade fair site is located close to the Cologne cathedral in the center of the Rhine metropolis and is connected directly with the international freeway network.

It includes a continuous covered hall space of 212,000 square meters, convention facilities for events with up to 5,000 participants, up to date service facilities, 35 fair restaurants with almost 8,000 seats and parking for 14,000 vehicles.

The 2,000 year old city of Cologne and its suburbs are home to more than 12 million inhabitants, a center of business and administrative agencies where numerous business headquarters are located as well as diplo-

matic representatives. Varied cultural activities, excellent restaurants and a charming old city provide this Rhineland metropolis with desirable leisure hour attractions.



COMMERZBANK

COMMERZBANK was founded in 1870 by Hamburg merchants and bankers and, through a series of acquisitions and mergers, soon became a leading force in German banking. Today it ranks third in size among German commercial banks and is engaged in all forms of commercial banking, as well as in underwriting, syndicate and investment banking. The emphasis in commercial banking is on short- and medium-term loans, but comprises long-term lending, too. Retail banking has also experienced rapid growth over the last decade.

The Commerzbank group maintains a domestic branch network of some 880 offices located throughout West Germany and West Berlin, with a staff of well over 21,000. It comprises 20 domestic banking and financial associates, the most important of which are Berliner Commerzbank and Rheinische Hypothekenbank, a leading German mortgage bank.

Foreign activities have a significant part in the Bank's overall business, whose international departments are all located in Frankfurt. Major holdings abroad include 100% interests both in Commerzbank (South East Asia Ltd.), Singapore, and in Commerzbank International S.A., Luxembourg, a 60% stake in Europartners Bank (Nederland) N.V. in Amsterdam and Rotterdam, and a 40% interest in the New York investment bank EuroPartners Securities Corporation, as well as holdings in more than 30 other financial institutions in about 20 countries. In addition, Commerzbank operates eleven foreign branches—in Antwerp, Atlanta (agency), Barcelona, Brussels, Chicago, Hong Kong, London, Madrid, New York, Paris, and Tokyo, and 19 representative offices. In all, the Bank today offers world-wide facilities in 35 countries at 70 different locations.

From the very beginning, Commerzbank has maintained especially close relations with the Americas. In 1971, Commerzbank transformed its New York representative office, which was opened in 1967, into a branch—thus becoming the first German bank to operate a full-service branch in the U.S. In 1974, the Bank's U.S. operations

were expanded with the establishment of a second branch in Chicago, and in 1979 its presence was further extended through the opening of an agency in Atlanta, Ga.

The Bank's capital and reserves as of December 31, 1981 totaled DM 2,478 billion. Its balance sheet total amounted to nearly DM 65 billion while its consolidated total assets DM \$100 billion.



DG BANK, with headquarters in Frankfurt am Main and two units in the United States, continued to expand its international business in 1981. Export finance relationships with corporate clients were again intensified, and the Bank's offices in New York and Los Angeles succeeded in further increasing their lendings. Foreign exchange volume and fee services related to international business also grew substantially. At year end, 1981, international assets reached 22.3 percent of the Bank's consolidated business volume (comprising total assets and contingent items) of DM 69.0 billion (equivalent to U.S. \$30.6 billion).

In London, where DG BANK has been present since 1973 through its affiliate, London & Continental Bankers Ltd. (LCB), a branch office was opened in 1981; in Malaysia, DG BANK acquired a 45 percent stake in Rakyat First Merchant Bankers Berhad.

In the Federal Republic of Germany, DG BANK serves as central bank and liquidity manager for the cooperative banking system. Owned by 9.3 million shareholders, this system encompasses over 3,900 local banks with a total of 19,700 offices, nine regional banks and a number of specialized financial institutions. In 1981, the system's assets growth rate of 9.7 again exceeded the average for all "universal" banks in West Germany, and at last year's end, its consolidated footings reached DM 377.9 billion (U.S. \$167.6 billion).



DELOITTE HASKINS & SELLS is an international accounting firm of more than 25,000 people, in 336 offices, in 70 countries.

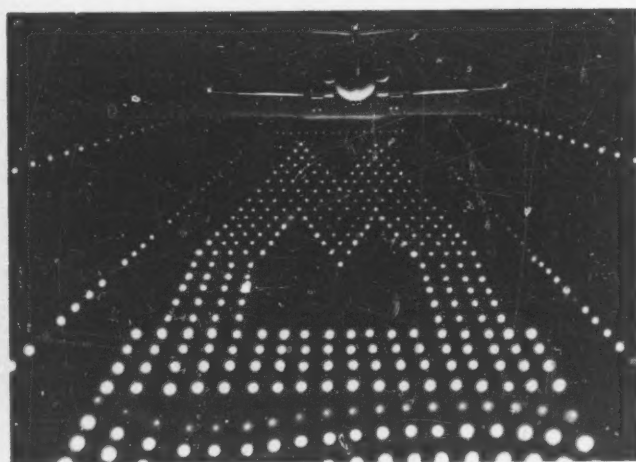
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Cologne Trade Fairs Your Guiding Lights to Success.

Dates

1983

* International Furniture Fair	January 18 - 23
* ISM - International Sweets and Biscuits Fair	January, 31 - February, 4
* DOMOTECHNICA - International Fair for Household Appliances and Techniques, Kitchens	February 9 - 12
* International Men's Fashion Week Cologne International Jeans Fair Cologne	February 25 - 27

West-German Fine Arts and Antiques Fair Cologne-Düsseldorf	February, 25 - March, 2
* International Hardware Fair, Tools, Locks + Fittings, D-I-Y Supplies, Household articles	March 9 - 12
* International Trade Fair CHILDREN and YOUNG PEOPLE Cologne	March 18 - 20
* INTERZUM - International Trade Fair for Furniture Production, Interior Design and Soft Furnishings - Upholstery Machinery	May 6 - 10
* INATEC - International Fair and Congress for Food Manufacturing and Processing	May, 29 - June, 1
* Ifcom - Cologne '83 International Telecommunications Fair and TELECOM '83 Germany - Congress for telecommunications in business and industry	June 8 - 10
* International Men's Fashion Week Cologne International Jeans Fair Cologne	August 26 - 28
* SPOGA - International Trade Fair of Sports Goods, Camping Equipment and Garden Furniture	September 11 - 13
* International Garden Trade Fair	September 11 - 13
* International Trade Fair CHILDREN and YOUNG PEOPLE Cologne	September 23 - 25
* s + b - International Exhibition for Sports, Swimming Pool and Leisure Facilities with international Congress	September, 28 - October, 1
* ANUGA - World Food Market consumers · gastronomy · technica	October 15 - 20
International Art Fair Cologne	October/November
* Admission restricted to trade visitors	Subject to alteration

Köln Messe

dorff K.G., and 101 offices in principal cities throughout the United States. We serve an almost endless variety of clients, private and public, around the world.

Our 7,800 people in the United States stand ready to help German companies with any accounting, auditing, tax or management systems need in connection with their U.S. investments and business operations. We serve many leading German enterprises, and have experiences in both U.S. and German accounting and reporting principles.

Several of our recent publications may be of interest to German businessmen. These include:

- "Doing Business in the United States of America—A Guide for the Foreign Investor," which advises how to go about making investments or starting operations in the U.S.A.
- "Taxation of Foreign Nationals by the United States," which describes the tax laws affecting foreign nationals living and working in the United States.
- "Foreign Securities Transactions in the United States of America," which guides the foreign issuer in complying with the U.S. Securities and Exchange Commission's registration and reporting requirements.
- "Taxation in Germany," which contains information on tax regulations for individuals and businesses in Germany.

These booklets are available free by writing to us at Deloitte Haskins & Sells, 1114 Avenue of the Americas, New York, New York 10036 or from any of our offices.

The publications are examples of the many extra ways we help our clients. The more we help our clients keep informed about business in the United States, the more we're able to help them achieve their business objectives.

We believe effective client service calls for more than just technical competence, it also takes a lot of sound business judgment... together with an innovative application of the skills of our profession, and a real desire to help.

Deutsche Bank
A century of universal banking



The DEUTSCHE BANK AG, headquartered in Frankfurt/West Germany, is the largest bank in the Federal Republic of Germany on the basis of assets, deposits, loans or capital. The Bank together with its consolidated subsidiaries is one of the leading banking enterprises with total assets as per December 31, 1981 of DM 192.4 billion, deposits of DM 130.1 billion and stock-

holder's equity of DM 5.89 billion.

The Bank is engaged in a full range of commercial banking activities such as providing credit of all types and maturities and accepting deposits. In addition, the Bank is, in Germany, active in underwriting, distributing and trading securities and holds equity investments in some of the leading industrial corporations in Germany. The Bank's consolidated subsidiaries are engaged in mortgage lending, investment management, property management, leasing and construction financing. Through Deutsche Bank Compagnie Financiere Luxembourg, the Bank is one of the leading institutions involved in Euro-market lending and loan syndication.

Due to the Bank's size, the broad range of its activities and its close ties with some of Germany's leading corporations, it is an integral part of the German banking system.

The New York branch of Deutsche Bank was established in 1978. The branch is involved in commercial wholesale banking with an emphasis on short and medium term lending, trade finance, documentary international business, foreign exchange and money market dealings. Internationally, the branch is concentrating on Latin American business. For international financing purposes, the branch conducts the business of a Cayman Island branch as a Euro-market activity of the bank.

By late 1981, Deutsche Bank had 14 branches and 7 wholly-owned affiliates abroad. There are presently 91 branches, affiliates, and representative offices in 53 countries. At year end 1981, the bank employed 39,836, and the Group a staff of 44,800 at 1,153 branches and 1,370 branches, respectively.



DRESDNER BANK was established in Dresden on November 12, 1872. In 1873, when the Bank completed its first full year of business, its total assets amounted to just over five million Thalers. More than one hundred years later, Dresdner Bank AG, now with its headquarters in Frankfurt/Main, has consolidated total assets of more than 130 billion DM (nearly 60 billion US-Dollars) as of Dec. 31, 1981, making it the second largest commercial bank in Germany and one of the largest banks worldwide.

As a "universal bank", the Dresdner Bank is active in commercial as well as in

investment banking in Germany and abroad and offers a full range of consumer and corporate banking services. It holds a leading position in placing bond issues floated by domestic and foreign issuers, in managing capital increases of German corporations and in introducing foreign shares to German stock exchanges.

International banking has always played a prominent role among Dresdner Bank's banking services. In recent years, the Bank has strongly intensified its involvement in the United States and maintains fully operating branches in New York, Chicago and Los Angeles and Representative offices in Houston, Texas, and Miami, Florida. With its participation of 75%, from originally 25%, in ABD Securities Corp., N.Y., Dresdner Bank has also gained a good position in the U.S. brokerage and investment banking business. The wholly owned subsidiary Dresdner Bank Canada has commenced operations in 1981.

Through the Deutsch-Sudamerikanische Bank AG, Hamburg, a member of the Dresdner Bank Group, and through various other participations, the Bank has traditionally held close ties with markets in Central and South America.

Dresdner Bank also maintains branches in London, Madrid, Barcelona, Milan, Hong Kong, Singapore and Tokyo as well as subsidiaries in Luxembourg, the Compagnie Luxembourgeoise de la Dresdner Bank AG-Dresdner Bank International, (CLB), and Singapore, the Dresdner (South East Asia) Ltd. (DRESEA) and has at present 31 Representative Offices in major financial and trade centers in the world. Last but not least, it is a member of the ABECOR Group (Associated Banks of Europe). All of these demonstrate the local presence which Dresdner Bank prefers for its international activities.

We are happy to serve our customers at home and abroad.



EM INDUSTRIES, INC.

EM INDUSTRIES, INCORPORATED, a subsidiary of Merck AG of Zug, Switzerland, and the U.S. associate of E. Merck, Darmstadt, Germany, is a diversified manufacturer of specialty chemicals for many different applications. The Merck group resumed its activities in the U.S. in 1971 with the creation of EM Laboratories, Inc., which was recently renamed EM Industries, Incorporated. EM Industries' business will reach a volume of \$85 million in 1982 and is

channeled through four operating divisions.

The EM Chemicals Division supplies a wide range of high quality specialty products to the pharmaceutical, food, electronics, optics and plastics and coating industries. During 1978 and 1979, the first phase of a new chemical complex was constructed in Savannah, Georgia, where pearlescent pigments for cosmetic and industrial applications are manufactured. In a recent addition vacuum deposition materials for the optical and electronic industries are produced.

The Rona Pearl Division, which was acquired in 1975, is a major supplier of specialty chemicals to the cosmetics industries. Rona Pearl has pioneered in the development of the first synthetic nacreous pigments approved for cosmetic use. These pearlescent pigments add an iridescent glow to powders, eye shadows, blushers, lipsticks, liquid makeups, nail enamels, cream, shampoos and soaps.

The EM Science Division was formed in 1980 by merging the recently acquired Harleco group with MCB Manufacturing Chemists, which was acquired in 1977. MCB is one of the oldest, most respected names in the field of laboratory chemicals. MCB had been able to extend its product offerings with the addition of fine laboratory products for E. Merck, Darmstadt, the largest worldwide supplier of high purity chemicals. MCB manufactures and sells close to 4,000 products used for analytical and research purposes in industrial, educational and governmental laboratories. Harleco has been for years a well established company in the clinical chemistry market. As E. Merck, Darmstadt, concentrates part of its very active research towards this particular field, it is expected that Harleco will be able to expand its offerings and broaden its product line, especially in clinical chemistry. Harleco at present manufactures and sells over 800 products used in applications. Major users are hospitals and private clinical laboratories, as well as government health services.

Center Laboratories, which joined the EM group early in 1979, offers a line of quality controlled, highly effective extracts to the allergist. These biological products include extracts of pollens, molds, dusts, inhalants, epidermals, insects and food which are used to bring relief to allergy sensitive patients.

In addition to these commercial activities, EM industries conducts clinical research for the Pharmaceutical Department of E. Merck, Darmstadt, and is testing new plant protection products developed by Celamerck of Ingelheim, Germany.



EUCLID

EUCLID, INC. is a wholly owned subsidiary of Daimler-Benz AG, manufacturer of Mercedes cars, buses and diesel engines. Euclid manufactures off-highway trucks for use in the mining, construction and quarrying industries.

The company invented and built the world's first off-highway trucks in the early 1930s and more than half of all trucks ever built by Euclid are still on the job. The durability and reliability of the product won worldwide attention when they were selected to replace railroads in the iron ore mines on the Mesabi Iron Range. Some units built at that time are still in daily service.

Euclid haulers are used throughout the world in major mines in Bougainville, The Philippines, People's Republic of China, USSR, South Africa, Peru, Australia and elsewhere. They have played a leading role in the construction of Mangla Dam, St. Lawrence Seaway, the Alaskan Pipeline and Canada's immense James Bay hydroelectric scheme. A fleet of 90 is currently being used to build Mosul Dam in Iraq.

The company has a lifelong reputation for creative design and was the first to introduce twin-engine power, planetary gearing and many innovations in hydraulic applications. It is currently engaged in major research and development programmed at its Cleveland headquarters. These programs concentrate on ways to reduce truck weight and fuel consumption, increased truck efficiency and greater product versatility. The programs have produced a revolutionary new operator's cab which simplifies driver training and vehicle operation and is as quiet as the interior of most luxury automobiles. The same programs have expanded the versatility of Euclid's mining trucks, giving mining engineers greater latitude in developing mining plans in new mines and greater opportunities to increase production in existing mines.

Product quality and assurance centers on destructive testing of all major components. Prototype trucks or those which incorporate new and advanced components are rigorously tested at the Euclid Proving Grounds in Laredo, Texas, and then assigned to actual job sites under the careful scrutiny of company and customer engineering personnel.

Euclid was a leader in the development of 'haul studies', applications analyses to explore the probable impact of its trucks to the production requirements of a specific job and provide Euclid customers with comparative data on the real costs of own-

ing and operating these big vehicles.

Today Euclid manufactures off-road trucks in Australia, Belgium, Canada, South Africa and the United States. The product line includes mechanical drive units of 25, 35, 50, 85, 100, 120 and 130-tons capacity and 120 and 170-ton electric drives for use in the construction, mining and quarrying industries. Off-highway haulers are Euclid's only product.

The product line receives worldwide support from a network of independent construction equipment distributors who provide parts and service support. On many major construction projects and mining properties, Euclid and/or its distributors frequently establish full support facilities on site and frequently provide driver training as well as other customary services.

EUROPARTNERS SECURITIES CORPORATION

EUROPARTNERS SECURITIES CORPORATION is the United States' full service investment banking and securities affiliate of Commerzbank (Germany), Credit Lyonnais (France), Nordic Bank Limited (England), Bank Leu (Switzerland) and Banco di Roma (Italy).

The firm was incorporated in New York in 1968 by Credit Lyonnais, under the name of Credit Lyonnais Corporation. The name Europartners Securities Corporation was adopted in 1970 when Banco di Roma and Commerzbank became shareholders. In September, 1974, Nordic Bank Limited, a joint affiliate of Svenska Handelsbanken (Sweden), Den Norske Creditbank (Norway), Kansallis-Osake-Pankki (Finland), and Copenhagen Handelsbanken (Denmark), became a shareholder. Bank Leu became a shareholder in 1975.

With emphasis on serving clients in the United States' financial markets, EuroPartners Securities Corporation performs a full range of international investment banking and securities brokerage functions, which represent a portion of the total banking business conducted by its parent banks as "universal" European banking institutions.

In 1968 EuroPartners Securities Corporation was one of the first investment banking and securities affiliates established in the U.S. by major foreign banks. In February 1979 EuroPartners became the first European-owned U.S. securities firm to become a member firm of the New York Stock Exchange. Today, EuroPartners Securities Corporation is one of the leading foreign-owned securities firms in the U.S. with capi-

tal in excess of \$10 million, offering a full range of corporate finance, investment management, research and securities brokerage services to an ever broadening group of corporate, institutional and individual clients in the U.S. and abroad.

Investment banking and corporate financial services provided by EuroPartners to European and American client companies include: underwritten public offerings of securities, private placement financing, tax-exempt industrial revenue and pollution control bond financing, mortgage financing for corporate real estate, leverage lease financing, tender offers, merger and acquisition expertise, venture capital financing, financial evaluations, and assistance with debt ratings and U.S. and foreign stock exchange listings.

A fundamental premise underlying the development of EuroPartners' corporate finance services has been an uncompromising commitment to giving client companies the best possible advice and counsel concerning financing or investment banking matters in the domestic U.S. market and international capital markets and to executing financing or other assignments effectively and professionally. U.S. companies look to EuroPartners for responsive and professional corporate finance services. European companies operating in or entering the U.S. market benefit from EuroPartners' extensive experience with the financial, accounting, legal and business problems that its overseas client companies encounter repeatedly in acquiring, developing and financing U.S. operations.

EAB **European American Bank**

EUROPEAN AMERICAN BANK CORP., headquartered in New York City, is the holding company for European American Bank & Trust Company, European American Banking Corporation, Euramlease, Inc., Dorman & Wilson, Inc. and EAB Venture Corp. Our resources exceed \$8.4 billion.

European American Bank & Trust Company, an American bank chartered in New York State, is among the top 30 of the approximately 14,000 commercial banks in the United States. It serves a worldwide market and offers a highly diversified range of products and services to consumers, small businesses, middle market companies, (firms with annual sales of between \$5 and \$110 million), U.S. multinational and

European corporations, banks and governments.

The bank is a full service commercial bank with over 90 branches in the New York/Long Island area, Edge Act offices in Miami and Los Angeles, and several other subsidiaries. It is a member of the Federal Reserve System, the Federal Deposit Insurance Corporation and the New York Clearing House Association.

European American Banking Corporation is a New York investment company with commercial banking powers, specializing in international finance and foreign exchange. In addition to its headquarters in New York City, the Banking Corporation has locations in Los Angeles, San Francisco, Nassau (Bahamas), Bermuda and Luxembourg.

Euramlease, Inc., provides leasing arrangements to companies in the U.S. and abroad.

EAB Venture Corp. provides growth capital for qualified small businesses with potential for growth.

Dorman & Wilson, acquired in 1981, is a major mortgage banking firm that provides EAB with expanded capabilities in financing real estate development and enables the bank to offer comprehensive mortgage and appraisal services.

European American Bancorp is owned by six of Europe's largest banks. This unique association provides access to a network of over 10,000 banks around the world. Our shareholder banks are: Amsterdam-Rotterdam Bank N.V., Netherlands; Creditanstalt-Bankverein, Austria; Deutsche Bank AG, Germany; Midland Bank plc, United Kingdom; Societe Generale, France.

FAG

FAG BEARINGS CORPORATION is an international organization whose trademark is a worldwide symbol of quality and dependability in the design and manufacture of bearings in all sizes and configurations. FAG is recognized as the signature of one of the world's oldest and largest manufacturers of precision ball and roller bearings. Since 1883 FAG has led the way in the development and refinement of bearing design and technology. Today, FAG employs over 31,000 people in branches and affiliate plants in the U.S.A., Canada, Brazil, Germany, Austria, Switzerland and Portugal. There are, in addition, FAG sales and service offices and distributors in more than 100 countries.

FAG headquarters in the U.S.A. are located in Stamford, Connecticut, where a full complement of administrative, marketing, engineering and distribution personnel service the American market. The chief U.S. production facility is in Joplin, Missouri. Now undergoing extensive expansion, the Joplin plant will be producing by 1982 an extended range of bearing types in sizes hitherto never produced in the U.S. FAG's capabilities in bearing design and manufacturing are second to none. From automobiles to steel furnaces, farm machinery to spacecraft, FAG is ready to provide bearings, housings, accessories and components, whatever and wherever the need.



Die kaufkraeftigen Maerkte Westeuropas, Kanadas, Asiens und Lateinamerikas entdecken in zunehmendem Masse die Vorteile des Staates Florida fuer Handel und Industrie, was dazu fuehrt, dass der internationale Handel und Investitionen bestens gedeihen.

Floridas strategisch guenstige Lage auf halbem Wege zwischen den Staaten des amerikanischen Kontinents, die natuerlich vorhandenen und noch zusaetzlich geschaffenen Vorteile des Staates fuer den Handel und die Tatsache, dass Florida als suedlichster Bundesstaat als Standort fuer auslaendische Investitionen ganz einfach attraktiv ist—alle diese Kriterien geben Florida einen der ersten Plaetze am internationalen Markt.

Natuerlich werden die Geschaeftsinteressen auch durch das gut ausgebaute Netz an Seehaefen, durch die direkten Luft und Transporteinrichtungen, die internationalen Banken und die Aussenhandelszonen angelockt, sowie auch durch die multinationalen Bueros, Dienstleistungen, eine guenstige Steuerstruktur und eine Vielzahl von Arbeitskraeften mit guten Sprachkenntnissen.

Der Staat heisst Handel und Industrie aufs Herzlichste willkommen und hat sich stets bemueht, jedes Land wissen zu lassen, dass Florida am Geschaeft interessiert ist. Floridas Handelsministerium unterhaelt nun Bueros fuer Wirtschaftsentwicklung in Stuttgart und Toronto sowie ein Buero fuer Lateinamerika in Sued-Florida, um den Kontakt mit moeglichen Handelspartnern und Investoren zu erleichtern. Das Buero fuer Lateinamerika befindet sich deshalb in Florida, weil der Staat die Erfahrung

When you need information on doing business in the U.S., ask one of the largest accounting firms in the U.S.

Deloitte Haskins & Sells, the international accounting, tax, and management consulting firm, has a wealth of business information to share with you. Here are several free booklets you may find of interest:

- **Doing Business in the United States of America — A Guide for the Foreign Investor.** This booklet will familiarize you with ways to go about making investments or starting operations in the U.S.A.
- **Taxation of Foreign Nationals in the U.S.A.** An in-depth guide to the laws affecting foreign nationals living and working in the U.S.A.
- **Foreign Securities Transactions in the United States of America.** A guide for the foreign issuer in planning for and complying with the U.S. Securities and Exchange Commission's registration and reporting requirements.
- **Taxation in Germany.** Information on tax regulations for individuals and businesses in Germany.

These booklets are available at any of our 102 offices throughout the United States, and in our offices in Germany — in Düsseldorf, Frankfurt/Main, Hamburg, Hannover, and Munich. Or you may write or call Robert S. Gorab, International Department, Deloitte Haskins & Sells, 1114 Avenue of the Americas, New York, New York 10036. Telephone: (212) 790-0515.

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gemacht hat—wie ueber 100 multinationale Unternehmen auch—dass diese Marekte von dort aus besser angegangen werden koennen.

Von Zeit zu Zeit veranstaltet Florida auch Besprechungen zwischen Vertretern des Staates und des Handelsministeriums einerseits und auslaendischen Firmen andererseits, um deren spezifische Beduerfnisse zu eroerttern.

Den auslaendischen und amerikanischen Unternehmen stehen eine Reihe von Dienstleistungen zur Verfuegung, wie z.B. Studien ueber Marktbedingungen, Computer—und technische Hilfeleistung, kostenlose Plazierung von "Match up" Annoncen in einer internationalen Publikation, Forschungsarbeit fuer interessierte Firmen, Veranstaltung von Handelsmessen und Hilfe bei der Auffindung des richtigen Standorts.

Florida verfuegt ueber ausgezeichnete Luft- und Wassertransporteinrichtungen, darunter 14 Seehaefen und 13 Flachwasserhaefen. Unter den Vorteilen, die die sechs internationalen Flughafeen des Staates bieten, sind Non-stop-Fluege nach Europa, Suedamerika und den wichtigsten U.S.-Staedten. Gut ausgebaute Strassen runden das Transportnetz ab.

1981 verzeichnete Florida 18.6 Milliarden Dollar im internationalen Handel—1.8 Milliarden Dollar mehr als im vergangenen Jahr. Der Staat besitzt fuenf Aussenhandelszonen. 26 Banken bieten internationalen Service. Ab September 1982 gibt es 35 "Edge Act" Bankgesellschaften. Es sind auch 38 auslaendische Banken taetig, drei weitere genehmigt, aber noch nicht eroeffnet; drei Bewerbungen werden noch in Betracht gezogen.

Diese Banken taetigen auch internationale Geschaefte. Ueber 100 multinationale Firmen haben ihre amerikanischen Bueros in Florida. Weiterhin finden sich auch 21 Zweigstellen auslaendischer Banken.

Eine angemessene und gerechte Steuerstruktur macht den Aufbau von Unternehmen sehr attraktiv. Bei jaehrlich 36 Millionen Besuchern, die 1981 mehr als 18.6 Milliarden Dollar ausgaben, kann Florida es sich leisten, die Unternehmenssteuern niedrig zu halten. Florida ist einer der sechs Bundesstaaten in den USA, in denen es keine staatliche Einkommenssteuer gibt—in dieser Beziehung der einzige Staat im Suedosten der USA. Auf Lebensmittel, Arznei oder Haushaltsgueter wird keine Umsatzsteuer erhoben. Ebensowenig wie auf Maschinen oder Ausruestungen fuer neue Produktionszentren. Bei Benzin, Oel, Holz oder Kohle, das fuer Industrieproduktion benoetigt wird, besteht ebenfalls keine Umsatzsteuer.

Florida vielfaeltige Vorteile, einschliess-

lich des echten Interesses des Staates an der wirtschaftlichen Entwicklung, bieten dem internationalen Handel und Investitionen ganz erhebliche Moeglichkeiten.



FRANKFURT FAIRS AND EXHIBITIONS, with a worldwide impact on commerce and trade, evolved from an 800-year tradition of international trade markets. By following or even anticipating the latest trends of their times, they constantly remained modern in the best sense of the word. The present evidence is a DM 400 million construction program. On the 50.5 acres of fair grounds, this provides facilities designed for the trade show expectations of the 1990's. The best conditions will be available for trade events of all kinds and sizes, for flexible adjustments to the requirements of all industries. Most of all, the dominating criterium of today's schedule of events will be emphasized: internationality.

Besides the Frankfurt International Fair, world-renowned "opinion leader" for high quality consumer goods, Frankfurt hosts another biannual event, the *Interstoff*. In May and November fashion designers and manufacturers acquaint themselves with the latest in clothing textiles. The annual *Heimtextil* fair draws more than 55,000 visitors, and features carpeting, curtains and other types of household textiles. The annual *International Fur Fair*, one of the leading trade events in the field, offers products from the fur finishing and processing industry as well as the season's latest designs.

The *Frankfurt Book Fair*, with more than 5000 participating publishing houses from over 90 countries, is the largest market for books, copyrights and translation rights.

In alternate two-year intervals, two exhibitions for the trade are staged in Frankfurt: the *I.A.A. International Automobile Exhibition*, which attracts more than one million visitors; and the *automechanica*, which features equipment for automotive workshops and service stations as well as spare parts and accessories.

Other important fairs include: the *ISH* International Fair for household sanitary heating and airconditioning technology; *ACHEMA*—chemical equipment and apparatus; *IFFA*, an international fair for meat processing equipment as well as spare parts and accessories, with a 44 percent participation of non-German exhibitors.

Whatever the direction of the economy

graph, the Frankfurt Fairs continue to distinguish themselves for the results they achieve for buyer and seller alike. The ever growing participation from all parts of the globe is the best proof of this claim to quality and performance.



The **GARRET CORPORATION** produces high-technology flight systems and components and provides numerous aviation services.

Its various disciplines extend across the spectrum of commercial, military and general aviation. Garrett has also increasingly diversified into the rapid transit and industrial fields, applying its aerospace expertise and technology to these endeavors.

Garret has 20 major divisions and subsidiaries and associated components in the United States, Canada and overseas. It features 24 distinct product lines, manufacturing more than 5,000 different items for civilian and military, air, ground and marine applications.

Garret became one of The Signal Companies in 1964, and today has some 23,000 employees—about one-fourth of whom are scientists or engineers.

Major Garret products include turbo-prop and turboprop aircraft engines, environmental control systems, and heat transfer, cryogenic and mechanical systems. The company produces a wide range of electronics equipment, pneumatic control, actuation and turbine systems, auxiliary power units, emergency locator transmitters and personnel locator beacons, along with inflatable rafts, slides, slide/rafts and life preservers.

Aviation services include design and installation of custom interiors and complete avionics systems, as well as engine and airframe retrofit. Fixed base services are also offered.

In the rapid transit field, Garret has become a leader in the development and production of electric propulsion systems. It produces gas turbine engines for industrial and marine use, and is making regenerators for gas turbine electric generating plants in the 60,000 pound class. It is also developing a 550-horsepower gas turbine engine for trucks and buses.

Garrett fuel saving turbochargers are in wide use on trucks, buses, tractors, cars and aircraft. The company also makes iron, steel and aluminum castings for both aviation

and industrial use, with much of the output going into Garret turbochargers, gas turbine engines and aircraft systems.

JOSEPH GRAF & CO.

JOSEPH GRAF & CO. is a medium-sized accounting firm which has been in existence for over 30 years. Several partners and staff members are bi-lingual. Our clients are located throughout the United States. The firm offers services which include auditing, tax preparation and planning, management services, mergers and acquisitions. We have particular expertise in dealing with the German, Swiss and Austrian tax treaties.

Financial statements and tax planning memorandums are prepared in German as well as English. Due to our expertise, we offer a unique type of service to American subsidiaries of divisions of foreign entities.



Hamburg

In the Federal Republic of Germany—West Berlin not included—Hamburg is the largest city, with a population of nearly 1.7 million. It is, at the same time, one of the 10 states of the federation.

By volume, the city's port is the largest in Germany and during recent years, Hamburg has also evolved as a leading exhibition and convention site.

As a federal state and as a city, Hamburg covers an area of 288 square miles, ranging from densely populated industrial and residential districts to farmland with orchards, fields, pastures and forests.

Hamburg today is an important banking center, as 145 domestic and foreign banks operate in this city. As a consular city, Hamburg ranks second only to New York, with 75 nations represented here by consulates general or consulates. The principal industries in Hamburg are electronics, chemicals and petro-chemicals, machinery and, of course, the large shipyards—to mention just a few.

Port of Hamburg

A prominent factor in the economic life of the city is the Port of Hamburg, a univer-

sal harbor, serviced by some 300 scheduled ocean lines. Total cargo volume handled in 1981 remained at 63 million tons. A number of major projects under construction or on the drawing board are expected to expand and further improve the port facilities. Container traffic is expected to produce an increased share of the business during the next few years from the present 43% to as much as 60% of all general and bagged cargo handled.

Tourist Attraction

Hamburg is an elegant city of astounding physical beauty. Two major lakes in the heart of downtown Hamburg are dotted with pleasure and sightseeing boats which also cruise along an extensive network of canals and waterways, and seeing Hamburg by boat is a special treat as it affords a pleasurable way of taking in the beauties of the lakeside lined with promenades, hotels, impressive office buildings and elegant residences, or the quaint old merchants' buildings of yesteryear along the "Fleets" or canals.

Hamburg's excellent museums, its state opera and internationally renowned ballet company, three symphony orchestras, superior international restaurants to suit any purse, and some of Europe's finest hotels have made the city a traditional mecca for tourists from all over the world (1981: 1.6 million). Over 43,000 North Americans visited Hamburg in 1981.

Hamburg as Business Site

Hamburg's combined domestic product of industries and services in 1979 amounted to \$32 billion, twice the per capita average of the Federal Republic.

All these factors combined, plus an international airport, superb overland and waterway routes to all parts of the continent, an excellent public transit system and a selection of choice business and industrial sites make Hamburg an attractive place for foreign investment. Hamburg extends a helping hand to all companies who are interested in locating branches or complete facilities here, especially through the services of the business and industrial consulting office of the city's Department of Economics.



Hamburg Messe und Congress GmbH

FAIRS AND CONGRESS CITY HAMBURG: As a cultural, communications and economic metropolis, Hamburg has grown into a recognized center for international congresses and fairs. As such, the city is ideally equipped. Situated at the crossroads

of multi-national markets, West Germany's biggest port and industrial city can offer hotel accommodations of 17,000 beds, first-class connections to other cities and countries and a colorful choice of attractive leisure values.

Hamburg's modern exhibition complex with its 13 halls, covering an exhibition area of 591,800 sq. ft., and the neighboring Hamburg Congress Center, which affords accommodations for 7,500 persons in 16 rooms, present a unique opportunity for combining exhibitions and conventions. About one dozen international specialized exhibitions annually attract more than 1.9 million visitors, and over 5,000 exhibitors from all parts of the world choose Hamburg as a venue for showing their products and services.

The German International Boat Show (staged each year in October), the specialized exhibition and congress "Ship, Machinery, Marine Technology International" (held every other year in September) and the "InternorGa," International Trade Exhibition for the Hotel, Catering and Bakery Trades, belong to the leading exhibitions of their kind in Europe.

Two outstanding new events are yet to come and both are expected to attract a considerable number of exhibitors as well as trade visitors from overseas: "Energy '83" and "Portex '83."

"Energy '83" - Exhibit and Congress, is the very first independent, international trade fair and convention aiming to present an all-inclusive picture of today's marketable technological and technical solutions to the energy problem and will take place in Hamburg from April 19 to 23, 1983. Other events dealing with the subject of energy have been confined to a particular region or sector and so cannot be compared with this event of world-wide scope.

"Portex '83" from September 27 to 30, 1983, International Port Exhibition and Congress, presents port equipment and port operation, port traffic and transport systems as well as port management, administration and port services.

The Portex '83 congress program consists of the forum "World Ports and World Transport" dealing with special problems of the Mediterranean ports, the Atlantic and Pacific ports and of special industrial seminars covering the themes "Port Planning and Port Construction," "Port Equipment" and "Port Organization and Management."

"Portex," first presented in 1981, attracted some 200 exhibitors from 17 countries. 6,000 experts from 38 countries conferred, consulted and pooled knowledge with one another, obtained information and discussed solutions to specific problems.

The growing need today for venues where

fairs can be combined with congresses is fully catered to in Hamburg by the architecturally and technically superb Congress Center Hamburg, one of the most modern buildings of its kind in Europe.

Finally, the halls are so arranged that catering facilities can be provided anywhere in the building.

Handelsblatt

HANDELSBLATT, Germany's business and financial newspaper, has been the German business community's daily reading for more than 30 years.

More than 100 journalists and correspondents all over the world represent Germany's largest and most versatile editorial staff for business and finance. They are where the action is, finger on the market pulse, passing on new information, analyzing and forecasting. This means up-to-the-minute information for business and finance professionals, indeed anyone interested in the economy.

All this, because the latest facts about markets, branches of industry and companies,

as well as German and international stock exchange trends, are more important than ever before for anyone whose job involves business and finance.

A distinction and, at the same time an obligation. The editorial concept gives Handelsblatt a unique identity among German newspapers; with daily analyses, commentaries and listings for all German and the most important foreign stock exchanges.

For this very reason, Handelsblatt is more than just a daily paper for middle and top management executives. Handelsblatt is "required" reading.

Handelsblatt enjoys similar status in Germany to the "Wall Street Journal" in the USA and the "Financial Times" in Great Britain.

No other domestic or international newspaper has a wider coverage in Germany of senior executives in banking and insurance.

The editorial concept is clearly tailored to the Handelsblatt reader's need for information and the particular interests of its advertisers.

Advertisements are not inserted just "anywhere"—they are placed in the corresponding editorial background.

Handelsblatt attaches particular importance to the daily analyses of companies, branches of industry and markets. They

provide a sound basis for investment decisions and entrepreneurial initiatives.

Economic policy has a significant bearing on investment decisions today. Detailed reports are published every stock exchange trading day, with news, commentaries and analyses of all important economic and political/economic matters.

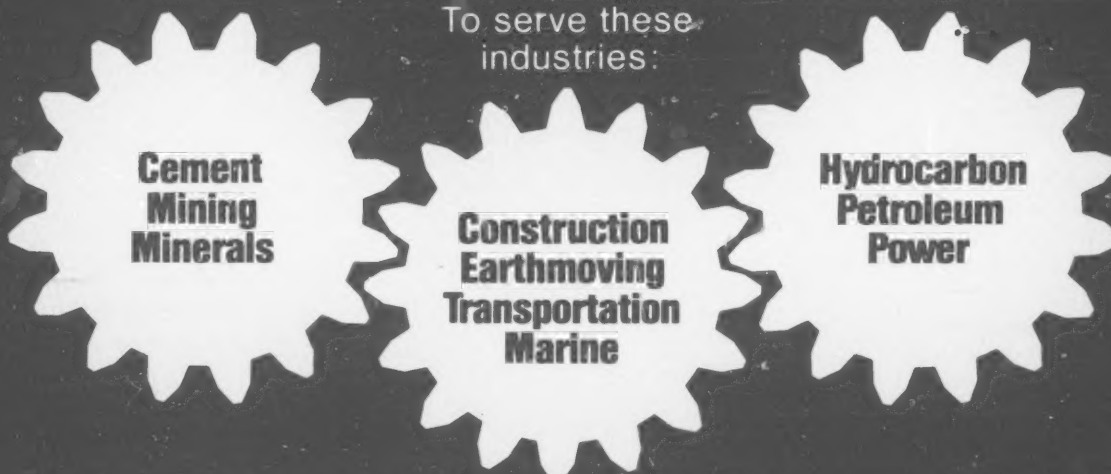
Information about national and international currency and monetary policy, capital markets, credit markets and investment opportunities.

An accurate analysis of events influencing the world economy has become increasingly important for entrepreneurial decisions, especially with today's interrelated world markets. Handelsblatt informs and elucidates.

The daily financial "newspaper within the newspaper" for the finance professional. With commentaries and reports on both German and international stock exchanges. Share and investment prices, options, money rates, various indices, stock exchange turnovers, commodity markets, bonds. Special areas and current problems are highlighted on additional feature pages. Handelsblatt provides complete information from all sectors of the business and financial world.

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Hapag-Lloyd

This year HAPAG-LLOYD AG, one of the world's largest shipping companies, celebrates its 12th Anniversary. The Hamburg and Bremen-based company is represented in the United States by its North American subsidiary, Hapag-Lloyd (America) Inc., New York City.

Though they are indeed proud to have completed 12 years of service, the heritage at Hapag-Lloyd goes back to the days of sailing ships. And as for celebrations, both the Hamburg-American Line (HAPAG), founded in 1847, and North German Lloyd, founded in 1857, have each separately toasted milestone 50 and 100 year anniversaries.

But the sum of these twelve years as a joint Hapag-Lloyd entity adds up to much more than a dozen years of success. The strategic consolidation and streamlining at the beginning of the 1970's gave way later in the decade to an equally well-planned expansion program based on market diversification. The events and achievements of each of the last twelve years have brought Hapag-Lloyd closer to its goal: to provide the most advanced network of transport services on the sea, in the air, and on land.

With its heritage on the sea, the birth of the new company came at a time when containerization was also in its infancy. Indeed, the merger of Hapag and North German Lloyd was brought about as a result of the high capital investment needed to convert to containerization. Both Hapag-Lloyd and containerization grew together to be strong and healthy in the past 12 years.

Before the 70's even began, Hapag and North German Lloyd had engaged in the first fully containerized service on trans-Atlantic routes under the trade name Hapag-Lloyd Container Line. By 1978, the first generation container ships of the late 1960's yielded to newer, more modern 1758 teu vessels to meet the demand for additional cargo space. Hapag-Lloyd's container ship fleet, which began as four in 1968, grew to 18 by 1978, and today stands at 29.

Hapag-Lloyd's container fleet grew in a very impressive way in mid-1981 with the introduction of its 3045 teu Frankfurt Express. This vessel is the largest container ship in the world.

The Hapag-Lloyd travel organization, called Hapag-Lloyd Reisebuero, today operates with 77 travel agencies throughout the Federal Republic of Germany, West Berlin, Austria, Luxembourg, Switzerland and the United Kingdom. All aspects of corporate and private travel services are

offered. Recent growth of this sector of North America is reflected in the establishment of Hapag-Lloyd Travel (America) Inc., with travel agencies in New York; Chicago; Charlotte, N.C.; and Hackensack, N.J., with plans to open additional offices in several major cities.

To meet the demand for larger cruises and more exotic destinations, Hapag-Lloyd introduced a new "Europa" last year. The old Europa, which has served more than 170,000 passengers for over a decade, was phased out of operation.

On the land, Hapag-Lloyd has made great inroads since 1970. Where overland container movement was in its early stages at the beginning of the decade, Hapag-Lloyd has made true door-to-door service a reality. Through the effective use of container pools, shipping agents and inland container coordinators, today Hapag-Lloyd deploys more than 70,000 containers worldwide.

Throughout the past 12 years in Europe, Deutscher Container-Dienst (DCD) has coordinated inland container movements by truck and rail. More recently, in the United States, Hapag-Lloyd began offering door-to-door container transport.

On land, on the sea, in the air... Since its formation, Hapag-Lloyd has surely broadened the already wide horizons that

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existed twelve years ago. With this same single-mindedness of purpose, the company looks forward to the future.



In 1907 the 25 year old investment banking firm of N.W. Harris & Company became HARRIS TRUST AND SAVINGS BANK.

The Bank, headquartered in Chicago, Illinois, is based on deposits of 4.5 billion as of December 31, 1981, the third largest Bank in Illinois and the 31st largest in the United States.

The business of the Bank is conducted in three principal areas: banking, investment, and trust.

Banking services are extended to individuals, business, governmental and institutional customers and correspondents throughout the world. The Bank's international banking services, which predominantly include foreign credits and dealing in Euro-currencies and foreign exchange, are provided through the Bank's headquarters in Chicago, its branches in London, Singapore, and Nassau, Bahamas, representative offices in Mexico City, Sao Paulo and Tokyo, and Harris Bank International Corporation, an Edge Act subsidiary in New York City. An international money market representative office was opened in 1980 in Los Angeles.

The Bank's investment department is a nationwide underwriter and dealer in Municipal and U.S. Government securities. This business is conducted from the Chicago headquarters and from representative offices in New York and St. Louis.

The Bank's trust department managed trust assets of 11.4 billion on December 31, 1981, placing it first among Chicago banks. Trust services are provided to individuals, partnerships, corporations and institutions. The department maintains an investment advisory representative office in West Palm Beach, Florida. The Harris Trust Company of Arizona, a subsidiary of Harris Corp., Inc., the Bank's holding company, is located in Scottsdale, Arizona, and serves customers in the U.S. Southwest.

The holding company, Harris Bankcorp, had assets of 7.488 billion on December 31, 1981. It is traded on the New York and Midwest Stock Exchanges.

Charles M. Bliss is chairman and chief executive officer of Harris Bank; B. Kenneth West is resident and Robert E. Vanden Bosch is senior vice president and head of the international banking group.



HEMSCHIEDT AMERICA CORPORATION, a worldwide leader in the manufacture of modern shield-type roof supports for longwall mining systems, entered its first American manufacturing facility last Autumn.

The company has over 30 years experience in manufacturing mine roof support systems. Since the introduction of shield supports in 1972, it has produced more than 300 installations worldwide.

The 42,500 sq. ft. structure, situated on an 8.5 acre tract in Findlay Township at the Regional Industrial Development Corporation (RIDC) Park West, is along the popular Airport/Parkway business corridor 10 minutes from Greater Pittsburgh International Airport.

The first phase of the plant employs approximately 200 persons in the manufacture of hydraulic shield supports. Two additional halls, to be added at a later date, will be about the same size as the first phase.

The new plant houses facilities for manufacturing, assembling, shipping and repairing of the shield supports. A central warehouse and general offices for Hemscheidt personnel are also included in the first phase.

"The new facility represents Hemscheidt's confidence in the growth of longwall mining in the United States as well as our anticipation of the increase in production of coal as a tremendous energy source," said Herbert J. Rissel, executive vice president.

He said the decision to open an American manufacturing plant was based on the desire to be closer to a developing market for longwall mining in this country, and to strengthen the confidence of the domestic coal mining industry with a product that will now be fabricated in the United States rather than being imported.

"It also improves delivery time and saves mine owners and operators the freight and duty costs on equipment that otherwise would have to be shipped from our European operations," Rissel continued.

Estimating that about 100 longwall mining systems are presently in operation in the United States, Rissel predicts that "that number should easily double within the next five years as interest in mining continues to grow, and that, by the middle eighties, more than 10 percent of underground coal mining production in this country could come from longwall systems, like those manufactured by Hemscheidt."

Hemscheidt America Corporation is a wholly-owned subsidiary of Hermann Hemscheidt Maschinenfabrik GmbH & Company, located in Wuppertal, West Germany.

During the past decade HENKEL's activities grouped within its U.S. subsidiaries have demonstrated successful growth. 1981 sales exceeded \$400 million, and business is geared to continued development with emphasis on growth areas where Henkel has superior technology to meet specific customer needs.

Henkel of America, headquartered in New York, is the parent and holding organization for Henkel's business in the United States. Principal operating organization is Henkel Corporation, Minneapolis, Minnesota, which is structured into four decentralized business groups and two central staff support groups: technology and control & administration. Each of the business groups contributes significant portions to sales and profits. The product lines are diversified and serve many different customer groups in various countries.

The Functional Products group manufactures and sells food ingredients and water soluble polymers used in a wide range of applications, a major one being petroleum drilling. The Chemical Products group encompasses a broad line of chemical specialties such as resins, adhesives, vitamin E, tocopherol antioxidants, organic specialties for cosmetics, pharmaceuticals and water treatment, leather and textile auxiliaries, and operations in Canada. To a large extent products are based on natural, renewable raw materials such as fats and oils, wheat, locust and soy beans, and guar gum.

Aamchem Products, Inc., Ambler, Pennsylvania, which has been made a division of Henkel Corporation, makes inorganic specialties for metal treatment and rust prevention for automotive, container and metal fabrication industries, and cleaning chemicals for the food processing industry.

The fourth business group combines the Mining Chemicals division and International Subsidiaries of Henkel Corp. in: Brazil, Mexico, Venezuela, Italy, Ireland, Japan, and South Africa. Mining chemicals are primarily sold to copper and uranium recovery companies in many countries.

In 1981, over three thousand people worked within the Henkel of America group. Henkel has sixteen production locations in the U.S., the major ones being in Kankakee, Illinois; Kenedy, Texas; Keokuk, Iowa; Ambler, Pennsylvania; and Hoboken, New Jersey.

The parent company, Henkel KGaA, headquartered in Duesseldorf, had worldwide sales of DM 8.8 billion in 1981. With approximately 100 affiliates throughout the world, foreign sales, including exports from Germany, accounted for 62% of total sales.

Helaba Frankfurt

Hessische Landesbank - Girozentrale

Headquartered in Frankfurt and an integral part of the city's domestic and international banking community, HESSISCHE LANDESBANK is among Germany's top 10 banks, with total assets at the end of 1981 of DM 59 billion.

As a large German universal bank concentrating on wholesale banking, Hessische Landesbank offers a comprehensive program of facilities geared to the needs of big corporations, governments and government entities, and financial institutions. These facilities include:

- International financing with special emphasis on medium to long-term fixed-rate DM loans. The Bank's global lending commitments are currently spread over more than 50 countries.
- Foreign trade financing, including documentary credits, letters of credit, government guaranteed export loans, non-recourse export financing (à forfait), and international payments and collections. The Bank is a member of S.W.I.F.T.
- Foreign exchange dealing, not only for the Bank's customers and Hesse's Sparkassen, but also as market maker for its worldwide correspondents in spot, forward, and Eurocurrency deposits.
- Money markets operations, serving central banks, other financial institutions and corporate clients.
- International capital market financings, including Euro-DM issues, publicly offered foreign currency issues, private placements, and foreign share placements.
- Investment advisory services and portfolio management. Hessische Landesbank is in permanent contact with banks and securities dealers in all major international security markets.
- Euromarket financing and services through its wholly-owned Luxembourg subsidiary Hessische Landesbank International S.A., full-service branches in New York and London. These facilities abroad and an active global network of correspondent banks provide Helaba's clients with the full scope of international services.

Hessische Landesbank acts as banker to the State of Hesse and performs clearing and other centralized services for Hesse's 52 regional Sparkassen, both of which are its shareholders.

HOESCH

HOESCH AMERICA INC. is a wholly owned subsidiary of Hoesch Werke AG in West Germany. Hoesch was founded in the Ruhr city of Dortmund in 1871, and has since then developed into one of Europe's major steel producers and steel manufacturers.

Our products range from semi-finished steel to rolled steel in all grades, such as sheets and plates, bars, sheet piling and mining sections. Our processed steel includes such coated products as plastic-coated sheets and tin plate, special sections, strapping pipe and tubing, as well as castings and forgings. Hoesch is an important factor in the manufacturing of machinery and heavy equipment.

With all this capability it was only natural that the Hoesch Group expanded its activities worldwide, and today has offices and representatives, as well as manufacturing plants, in every major country in the world. Hoesch America Inc. was started in the U.S. in 1957 and the main purpose was to cover an important market for the Hoesch Group. Over the years it led to a steady growth of international trading, including exporting from the U.S. to various countries in the world. Hoesch America became a significant member of the international steel community. In the 1960's Hoesch decided to further invest in the U.S. and today owns a number of successful manufacturing plants.



PHILIPP HOLZMANN
Aktiengesellschaft

PHILIPP HOLZMANN AG began as a family business before developing to its present significance as a company with a worldwide reputation in the construction industry. The Company, founded by Johann Philipp Holzman in 1849, was at the beginning mainly involved in railway construction. Business was soon extended to all areas of building and heavy construction.

Today Holzman is one of Germany's leading industrial undertakings and is ranked among the top international construction companies.

Domestic business is dealt with by the parent company at eight main branches, which have sole responsibility, 24 ancillary branches and a General Contractor's division at the Central Administration for turnkey construction. The technical divisions at the Central Administration back up

the sectors involved in construction.

20 subsidiary companies are employed in the specialized field of precast element construction, prefabricated housing, special heavy construction, foundation and waterway construction, road construction, also consulting and offshore work, natural stone quarrying and housing administration.

At the international level HOLZMANN ranks with its volume of construction among the major companies in the industry. In 1980, projects were carried out in 29 countries under the unified supervision of the Holzmann group. The subsidiary companies, whose activities as yet have been confined to Germany, are taking over an increasing number of contracts abroad.

The company has been working in other European countries as early as 1882. The first contract in 1893 for railway construction in Asia Minor marked the beginning of the Holzmann tradition in the Near and Middle East. The acquisition of the J.A. Jones Construction Company, Charlotte, NC, and of the Lockwood Greene Architects/Engineers, Spartanburg, SC, extended the sphere of successful international activity to the American Continent.

The widely dispersed geographical locations of the Company's activities are conducive to growth.

In 1981, the Holzmann Group achieved a total building volume of \$3.4 billion, 29.2% of this in the Federal Republic of Germany, 40.4% in the USA and 30.4% in other foreign countries (particularly in the OPEC states).



INA BEARING COMPANY, INC., is part of a worldwide organization known for the quality and reliability of its roller and other anti-friction bearings.

From its small beginnings in 1945, the company has grown rapidly by pioneering scores of new products. INA Needle Roller Bearings have provided designers in many industries, particularly the automotive and machine tool industries, with a solution to their various problems. Their space-saving design made the use of rolling bearings possible where previously only plain bearings were used.

Over the years, the original range of INA Bearings has been extended to encompass a much wider variety of rolling bearings. These include bearings for both light and heavy duty applications, as well as bearings for rotary and linear motion.

Today more than 18,000 INA employees throughout the world produce over 10,000 different types of precision rolling bearings, of which a high number are made to customers individual requirements. Specifically, our product line includes a large variety of unit cages, shell bearings, needle roller bearings—radial and thrust, combination bearings, precision ground bearings, ball bearings and spherical plain bearings.

INA Rolling Bearings are manufactured in 16 plants worldwide. A network of 19 INA companies and 26 agencies extends our representation to every continent, providing reliable service and excellent communication with our customers.

All worldwide market research together with production and application experience is collated at the parent company in Herzogenaurach near Nuremberg. Thus, a continuous interchange results between the various INA locations and ensures that the latest technology is shared worldwide. This is reflected in the advanced state of the art of all INA products.

In the United States, INA headquarters are located in Bensalem, Pennsylvania, where a competent staff of sales and engineering personnel are ready to fill your bearing need.



Iowa is often referred to as America's Heartland and the Nation's Breadbasket. It is a prosperous agricultural land, but more is found here than bountiful harvest and rich, black topsoil. Industrial output in Iowa is three times as great as agricultural output. Iowa's climate is good for agriculture and industry.

Iowa is a land of proud people, proud of their state, and rightfully so. Many outstanding qualities are found in Iowa; a productive work force, a top ranked transportation network, one of the finest education systems in the U.S. and the home for many blue-ribbon companies.

Iowa's business climate is progressive, as proven by the many industries that have come into the state. Companies such as General Motors, Maytag, General Electric, Rockwell International, Eaton Corporation and IT&T, just to name a few, have opened plants here, bringing a large number of jobs and revenue to Iowa.

Iowans are also proud of the state's financial condition. Funds spent by state and local governments are about average, but in

Iowa greater emphasis is given to education and highway construction than in most states.

In dealing with industries and keeping the financial status of the state looking bright, it is important to acknowledge Iowa's corporate tax laws.

Iowa law permits—and even encourages—state and local governments to work with industry. Iowa is the only state with a single-factor corporate income tax, meaning only products sold for delivery inside the state are taxed. In Iowa, it is possible to deduct 50 percent of federal income tax from net income to arrive at Iowa's taxable income. Many other states are dropping federal income tax deductions altogether.

When it comes to getting questions answered and dealing with the state in a personal manner, there is an agency that can help. The Iowa Development Commission, based in Des Moines, works in all areas: agriculture, industrial development, international trade, travel development and public information.

The Industrial Division, within the IDC, is available to help in locating or expanding business in Iowa. Not only does the division work out of a domestic office, but there is an Iowa office in Frankfurt, Germany. The overseas staff calls on about 200 companies a year to encourage foreign industrialists to locate in Iowa. The Frankfurt office can also give advice on marketing opportunities and joint venture possibilities in Iowa.

Iowa, America's Heartland, is going to meet the needs of Iowans and those discovering Iowa abroad. Learn firsthand why Iowa's slogan says, "Iowa: a place to grow."



KLOCKNER-MOELLER CORPORATION is a specialist in the low voltage industrial motor control field and is a subsidiary of the Klockner-Moeller Elektrizitäts GmbH in Bonn, a recognized market leader in West Germany. K-M Corp. combines experience, sound engineering practices and customer service in promoting their full line of quality electrical and electronic equipment. This includes motor control center, main distribution boards, circuit breakers, interruptors, fusible disconnect switches, motor starters, heavy-duty push-button units and pilot devices, control relays, and limit switches, engineered custom control panels as well as solid state industrial relays and microprocessor-based

freely programable controllers. Its products are designed and tested to meet all pertinent national and international electrical equipment manufacturing standards.

A unique decentralized corporate structure enables K-M to provide its customers with direct access to first-rate technical service. It has established seven independently operating factory branches located across the U.S.A.

Every branch is a fully integrated production and assembly facility which handles the full line of K-M products and features complete engineering and design capabilities. Customer requirements are then met quickly and efficiently. Customer service is not restricted to this country but is extended world-wide in over sixty-eight countries, where K-M subsidiaries are located.

Klockner-Moeller Corporation locations in the U.S.A. are as follows: Fairfield, New Jersey; Atlanta, Georgia; Chicago, Illinois; Houston, Texas; Tulsa, Oklahoma; Los Angeles, California; and San Francisco, California.



FRIED. KRUPP GmbH of Essen, Germany, with a worldwide reputation as a leader in industrial technology and engineering excellence, has a long-standing commitment to serve the US market in many diversified areas.

Among Krupp subsidiaries and affiliated companies established in the United States are the following:

Krupp International, Inc. of Harrison, New York, has two major divisions. Its Krupp Industrie- und Stahlbau (KIS) Division is active in the fields of bulk materials handling, metallurgical plants, rolling mill installations, cranes, as well as equipment for rubber and vegetable oil seed processing. Only recently it included in its product lines new drilling equipment for mining and large diameter holes for the oil industry, water wells and foundation work.

The Krupp Atlas Elektronik (KAE) Division of Jersey City, New Jersey, serves the marine markets with their radar and collision avoidance systems as well as their sonar-operated fishfinders. Also, for the survey of coastal areas and river beds the KAE Division offers highly specialized sonar equipment that provides greatest accuracy.

Krupp MaK Diesel Inc. of Rosemont, Illinois, is marketing the product lines of MaK in Kiel, Germany, predominantly Diesel

engines for all types of ships, as well as for Diesel powered generating plants.

Krupp Steel Products and Krupp Specialty Steel of Houston, Texas, supply the complete range of carbon, alloy and stainless steel grades in shapes and sheets. Forgings go to various US industries.

Polysius Corporation of Atlanta, Georgia, transfers the most modern cement plant technology to the US market.

Krupp Wilputte Corporation of Murray Hill, New Jersey, only recently acquired by Fried. Krupp GmbH, are engineers-constructors of coke ovens and coal chemical plants, related auxiliary machinery, as well as pollution control equipment, systems and devices. Hot Blast stoves and sinter plants are also a part of Krupp Wilputte's technology and expertise.



KUEHNE & NAGEL

KUEHNE & NAGEL was founded in Bremen, Germany, in 1890 by August Kuehne and Friedrich Nagel, with its first office in Hamburg in 1902. Since then, the

Kuehne & Nagel group of companies has become one of the largest and most diversified transport and freight forwarding organizations in the world, with 8,200 employees working out of 285 offices on 5 continents to provide the utmost in efficiency and ingenuity, constantly on the alert for improved ways and means within the wide, ever-changing field of transportation.

Kuehne & Nagel expanded its worldwide operations to the U.S.A. in 1967. Presently, Kuehne & Nagel, Inc. and Kuehne & Nagel Air Freight, Inc. operate out of New York City, Boston, Chicago, Atlanta, Baltimore, Charlotte, Cleveland, Dallas, Denver, Houston, Los Angeles, Miami, Minneapolis, New Orleans, Norfolk, Phoenix, San Francisco and Seattle, shipping to and from every location, airport and port in the U.S.A. From the smallest spare-parts shipment to complete industrial plants, Kuehne & Nagel offers door-to-door worldwide service.

Kuehne & Nagel acts as an independent intermediary and consultant in all fields of transport of goods and traffic. Kuehne & Nagel's range of services comprises almost everything related to transportation, with each individual section characterized by specialization:

- *Overseas shipping services* include container operations, port handling, stowage,

tallying and ship chartering;

- *Project management* includes transport coordination for industrial projects to the construction site;

- *Air cargo service* is comprised of consolidation, charter, split-charter and door-to-door air freight services throughout the world;

- *Warehousing and distribution* include bonded warehousing, distribution centers for brand-name items, storage of imported raw material, and commissioning, with a network of 100 Kuehne & Nagel terminals throughout the world.

- *Overland services* include overland trailer services, collection and delivery, railway transport, and intermodal services;

- *Special transportation-related services* such as heavy haulage, removals, fairs and exhibits, transport of antiques, works of art, livestock and seaworthy packing are being further developed and expanded. Services also include customs clearance, specialized commodity services, transport insurance, loading inspection and documentation services.

In order to satisfy the customer's transportation needs, Kuehne & Nagel is an efficient and accessible partner, offering worldwide effective communication, instant information, modern data processing, transport consultation and freight calculation.



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GEBRUEDER KULENKAMPFF, founded in 1806, is an international trading company with a world-wide network of subsidiaries, branches and agencies.

In the 175 years of our existence, we have acquired a leading position in our main import activity, leaf tobacco, as one of Europe's most recognized companies. Gebrueder Kulenkampff is still privately owned and with annual sales exceeding U.S. \$120 million, we rank among the leading trading houses within the Bremen business community.

In the field of technical products we have gained a reputation as specialized exporters of machinery, parts and supplies to the minerals, energy, construction and transport industries.

We provide international cement manufacturing companies, underground and open pit mines, mine supply houses, construction equipment distributors, manufacturers and distributors with machinery, process equipment, supplies, diesel parts and a complete range of wear parts. Our specialized parts supply system is aimed at those international mills, mines and processing plants in need of genuine OEM parts, but which find their present purchases too costly. For the cement and mining industry we also render consulting, erection and commissioning services.

In addition to fifteen active international subsidiaries serving our tobacco interests, we have affiliated companies in New York, Montreal and London, as well as agencies in Nairobi, Johannesburg and Sidney for technical sales support.

GK also has a financial interest in INTERTRAC, Gevelsberg, Germany, with a workforce of 800, annual sales of more than U.S. \$100 million, manufacturers of crawler undercarriages, OEM suppliers to the world's leading construction and mining equipment manufacturers.



Lufthansa

Mid-year operating results for LUFT-HANSA were significantly better than for the first half of 1981, and if the trend continues through late fall, the airline expects to show a profit for the year. Revenues from flight operations for the first half of 1982 were up 13.9 percent to 3.4 billion German marks (\$1.4 billion).

Fuel prices remained relatively stable which helped to moderate the increase in operating costs, and an upturn in passenger demand in several markets, especially the Far East, contributed to a 4.2 percent growth in ton kilometers carried.

Passengers carried for the January-June period rose only 0.7 percent, but revenue passenger ton kilometers gained 5.3 percent. Further adjustments of capacity to demand resulted in a seatload factor improvement of two points to 59.1 percent. Revenue freight ton kilometers increased 2.3 percent and mail ton kilometers grew 11.7 percent.

In 1981, Lufthansa earned a small profit despite the burden imposed by the largest investments yet made by the company in a single year. The overall corporate profit was 5.5 million German marks (\$2.45 million*) compared to a 1980 profit of 6.7 million marks (\$3.42 million). The company paid a five percent dividend to preferred shareholders.

Lufthansa's production in 1981 increased only marginally to 5.89 billion ton kilometers compared to 5.48 billion in 1980. The airline's gross operating for 1981 was reduced by income earned from technical services, flight training, inflight and ground services to 68.7 million marks (\$30.4 million). The airline's investments in aircraft, spare parts, airport facilities, etc. totaled 1.18 billion marks (\$525 million), almost double those of 1980.

Fuel costs increased once again, up 23.9 percent from 1980. The airline's fuel bill for 1981 increased 309 million marks (\$136.7 million). The increase in fuel costs reflected the average exchange loss of the German mark against the U.S. dollar—24 percent. Domestic German fuel prices were also heavily affected by the U.S. dollar parity situation.

Non-operating revenues were well above those of 1980—33.1 million marks (\$14.6 million). The improvement over the previous year was mainly due to profits on the sales of 22 Boeing 737-100s which totaled 180.4 million marks (\$79.8 million). Last year, Lufthansa replaced its 100 series of 737s with a fleet of 32 Boeing 737-200s.

In the first half of 1982 Lufthansa spent 208 million marks (\$85 million) on deposits for aircraft and engines delivered during

that period. Lufthansa is currently operating 110 aircraft: 15 Boeing 747s including two freighter aircraft, 26 Boeing 727s, 41 Boeing 737s, 14 DC-10s, 11 A 300s and 3 Boeing 707s.

For more information, contact: Lucille M. Hoshabjian, Lufthansa Press Office. (212) 397-9272

*Note: 1981 Exchange rate is DM 2.258 to \$1; 1980 — 1.96 to \$1.

LURGI

LURGI, an engineering group within Metallgesellschaft AG Frankfurt am Main, is engaged in the planning, design, engineering and construction of the plant and equipment for a wide variety of projects in the chemical, metallurgical and other industries.

Lurgi, with its three operating Frankfurt companies:

- Lurgi Chemie und Huttentechnik GmbH
- Lurgi Kohle und Mineraloltechnik
- Lurgi Umwelt und Chemotechnik GmbH and with its U.S. operating company
- Lurgi Corporation

is in a particularly good position to take up the challenge of the current world economic situation—increasing scarcity of raw materials, high energy prices, more stringent pollution control regulations, and is able to tackle many of the technological problems arising from this situation.

The Lurgi Companies have occupied a position in the American market for decades, and have since 1979 been represented by Lurgi Corporation in River Edge, N.J. and Belmont, CA. Furthermore, Lurgi's international organization includes 15 subsidiaries in Europe and overseas, as well as several representatives and agents in more than 40 countries.

These are the activities of Lurgi: Supply of complete turnkey plants, plant units and equipment based on customer-owned processes, Lurgi processes, licensed and standard processes, including construction, start-up and technical guarantees, extensive up-to-date laboratories and pilot plants, on a semi-industrial and industrial scale, are available for research and experimental work.

The Lurgi Group does not depend on its own manufacture of equipment, machinery and other plant items, and is, therefore, free to select the best qualified manufacturers on the world market, often in the client's country.

Upon request of the client, Lurgi will also organize proportional or complete financing of a project either on a national or multinational basis ("financial engineering").

The structure and engineering practices of the Lurgi Group permit it to suggest and realize in each individual case the most suitable type of contract.

The Lurgi Group at present has a staff of about 4,500 in Frankfurt and about 1000 abroad. 3000 staff members are engineers and technicians.

The turnover of the Lurgi Group in 1980/81 was DM 2.6 billion, the flow of new orders DM 1.7 billion, and the backlog DM 3.1 billion. Lurgi expended 3.7 million engineering hours in the fiscal year 1980/81.

The Lurgi Companies are a wholly owned subsidiary of Metallgesellschaft AG, Frankfurt am Main. All figures are consolidated in the Metallgesellschaft profit and loss statement, and thus Lurgi's financial results are not published separately.



Worldwide Transportation

Lykes Lines

LYKES BROS. STEAMSHIP CO., INC., a subsidiary of The LTV Corporation, operates a fleet of 46 U.S.-flag ships on trade routes covering five continents and serving the U.S. Gulf, West and South Atlantic coasts and the Great Lakes and St. Lawrence Seaway.

The company got its start at the turn of the century, when the sons of Dr. Howell Tyson Lykes began shipping cattle from Tampa, Florida, to Cuba in sailing schooners. From those beginnings, Lykes has grown steadily to its current position as one of the world's leading carriers.

Lykes' trade routes extend from the U.S. to Europe and the United Kingdom, the Mediterranean, South and East Africa, the West Coast of South America, and the Far East and Southeast Asia.

Northern Europe and the U.K., which Lykes began serving in the 1920s, are served by Lykes' innovative barge, container and heavy-lift carriers, the SEABEES. Each SEABEE ship can carry as many as 38 barges, as well as several hundred containers. The barges are lifted aboard ship on a 2,000-ton-capacity hydraulic elevator. Containers can be handled by efficient shoreside gantry cranes.

The SEABEE system comprises three 38,000-deadweight-ton "mother ships," 243 hopper barges, four temperature-controlled chill barges for perishables, and three flat-deck barges which are specially reinforced for heavy and oversized cargo.

The other ships in Lykes' Fleet are five roll-on, roll-off ships and 38 conventional

vessels in five classes. All ships in the Lykes fleet are equipped to carry containers. Lykes, based in New Orleans, has offices in major U.S. ports and in Antwerp, Bremen, Callao, Durban, Genoa, Hong Kong, London and Tokyo. In addition, Lykes is represented by agents in dozens of other cities worldwide.



M.A.N. is one of the leading European manufacturers of heavy mechanical equipment, trucks and buses.

M.A.N. A.G., with 46,000 employees, has sales of about DM7 billion. The M.A.N. Group, with German subsidiaries in which M.A.N. A.G. has a majority interest, reports sales of close to DM10 billion, with a workforce of some 65,000. M.A.N.'s export share has been steadily increasing and now exceeds 60%.

M.A.N.'s diversified range of products, all developed from within the company, over its 140 year history, serves broad segments of today's markets, such as basic industries, power generation, transportation, communication, civil engineering, and industrial equipment—through research, development, design, engineering, manufacture, supply and erection of mechanical equipment, as well as complete systems.

Intensive efforts and resources invested in innovative and future-oriented projects—such as space exploration, solar and wind energy, waste heat recovery, cogeneration, components for coal gasification, chemical waste destruction, transportation systems or new materials—are aimed at continuing M.A.N.'s leadership in engineering.

The company is structured into five Product Divisions:

Commercial Vehicles

Trucks, buses and municipal vehicles contribute more than 50% to the sales of M.A.N. In the U.S., M.A.N. Truck and Bus Corporation, with a plant in North Carolina, manufactures articulated buses for public transit.

Diesel Engines

In 1980, Burmeister and Wain, the Danish diesel manufacturer, was acquired by M.A.N. M.A.N.-B&W Diesel offers the widest range of diesel engines in the world.

Mechanical and Structural Engineering

Among its many engineered products in service in the U.S., are 850MW steam turbine generators, steel foundations, material handling plants

Mechanical and Industrial Plants

M.A.N.-GHH, Sterkrade produces, among others, equipment for the steel petrochemical and mining industry. For floating dry docks, for shipyards, large axial compressors and gas coolers for synthetic fuel plants, deep mine hoists, are examples of M.A.N.-GHH supplies to the U.S.

New Technology

Carries out R&D work in energy, environment, raw materials, electronics, space exploration, transportation and material technology.

M.A.N.-Roland, a wholly-owned subsidiary of M.A.N., is an internationally leading manufacturer of printing machinery. M.A.N.-Roland USA, Inc., located in New Jersey, produces web-fed presses for the U.S. and export markets.

American M.A.N. Corporation, with offices in New York, San Francisco and Houston, is responsible for marketing, sales and service of M.A.N. products in the U.S.



MAHLE, today one of the world's largest independent manufacturers of pistons of all sizes, designs and materials for internal combustion engines, celebrated its 60th anniversary in 1980.

Mahle was initially started in 1920 by the brothers Hermann and Ernst Mahle in a small frame work building at Bad Cannstatt, a suburb of the city of Stuttgart, West Germany.

From six employees and one small workshop in those days, Mahle has grown to an enterprise that employs more than 10,000 people and operates worldwide. Head Office, Research and Development facilities and seven plants in Germany today support Mahle's worldwide activities. The engine market is served by wholly owned manufacturing companies, by joint-venture operations and licensees in 16 countries of the world. One of the largest subsidiaries is a modern foundry and manufacturing plant in Morristown, TN. This plant with 130,000 sq. ft. serves the most demanding needs of America's heavy duty diesel engine industry.

Even though pistons of all sizes and designs for all applications are still the main product, Mahle has expanded its activities into other products centered around the automotive or engine industry. Oil, fuel and air filters, cylinders, engine blocks and wheels made of aluminum alloys, air compressors and tire inflation gauges, piston

pins, cylinder liners and other grey iron castings are amongst the products which are manufactured and sold today by Mahle.

Mahle, truly the partner of the automotive and engine industry worldwide, has been reliable in the past as it will be in the future.

Main Hurdman

MAIN HURDMAN is a major full-service accounting firm with 500 partners in 75 offices throughout the country. Its diversified client list includes some of the largest U.S. industrial companies.

In 1979 Main Hurdman greatly expanded its international capabilities by becoming the U.S. founding member of Klynveld Main Goerdeler (KMG), which is among the five largest accounting firms in the world. Its close working relationship with Deutsche Treuhand-Gesellschaft, KMG's prestigious founding member in Germany, makes it especially well qualified to provide accounting-related services for German-based companies doing business in the United States and for U.S. firms with interests on Germany.

Auditing Services: Main Hurdman is skilled in the examination of financial statements prepared in response to U.S. or German reporting requirements, and attuned to the needs of the regulatory authorities and financial institutions in both countries.

Tax Services: The firm's wide range of tax services include tax planning; advice and assistance in complying with local, national and foreign tax laws; assistance in dealing with tax authorities, and counseling on tax problems of individuals and corporations. Its fiscal expertise extends to other tax-related areas such as mergers and acquisitions, transfer pricing, expatriate tax services, forms of business organization for multinational entities, offshore financing and operating in duty free zones.

Management Consulting Services: Main Hurdman's consulting services are designed to assist management by providing professional counsel in disciplines where internal expertise is not available. They include advice on designing and implementing management information and financial reporting systems to meet subsidiary and parent company requirements, designing electronic data processing applications, budgeting, production planning, inventory control and project planning.

All professional services are performed under the constant direction of a Main Hurdman engagement partner, who can draw upon the full resources of the firm, including its national and international tax expertise. For U.S. branches or subsidiaries of German companies, the engagement has the additional support of several KMG—*Wirtschaftspruefern* assignment in the National Office of Main Hurdman.



This is the MANNESMANN logo. Originally, it was symbolic of the pioneering ventures of the Mannesmann brothers who invented the seamless pipe-making process. Today it stands for a company that produces a complete range of tubular products, has steel-making facilities of its own, manufactures industrial products in the fields of mechanical engineering, plant construction, electrotechnics, and trades worldwide in its own as well as external products.

The following Mannesmann companies offer the combined know-how, experience and capacity of a large organization:

Mannesmann Pipe & Steel Corporation, Houston, Tx., is a vital and experienced marketing organization. Its product range covers steel pipe, sophisticated tubular products and components, as well as rolled products. From its two sales offices, trained specialists provide advice on a comprehensive array of technical, economic questions.

Mannesmann International alloys, Inc., Sugarland, Tx., established in late 1972, is an experienced storage and distribution organization. The company maintains large inventories of carbon alloy seamless stainless steel pipes and components for the refining, chemical and power industry. Trained personnel provide prompt and efficient supplies according to customer requirements.

Mannesmann Hansen Corporation, New York, N.Y., is an international trading company exporting U.S. coal and coke worldwide and trading in the US with imported and domestic coal and coke.

Barrett Electronics Corporation, Northbrook, Ill., established in 1914 is a manufacturer of industrial electric trucks and has been a pioneer in developing automatic guided vehicles. Automatic guided vehicles have won wide acceptance throughout the industrialized world for use in automating factories and warehouses.

For more than 20 years Mannesmann Demag Corporation, Cleveland, Oh., has

been marketing and servicing systems, projects, machinery, and component products from its American bases. It supplies the steel industry with furnaces, converters, continuous casting plants, rolling mills and forging equipment. It also manufactures material handling equipment and construction machinery as well as process compressors and compressed air equipment. Experienced sales and service technicians operate from centers in nine major markets in the USA and Canada. An extensive dealer network in other key locations completes the service organization.

American Lohmann Corporation, Hillside, N.J., is engaged in the design and manufacture of gear transmissions for high speed, high horsepower industrial aircraft and marine application. It holds a 30-year reputation as a quality manufacturer of precision transmissions.

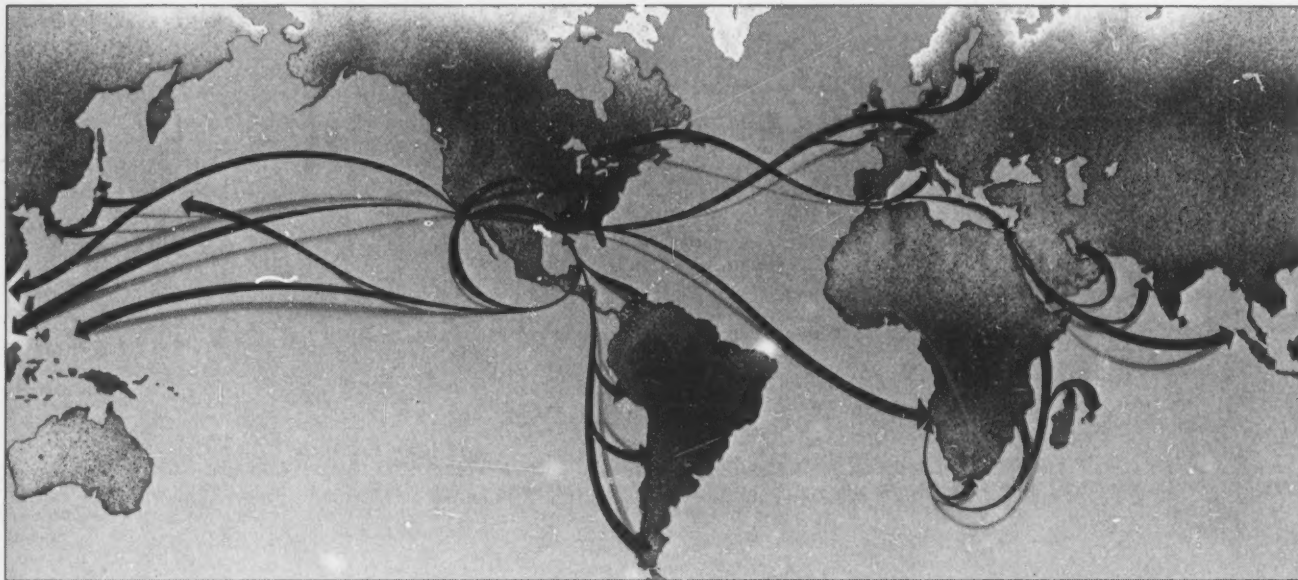
The Rexroth Corporation, Bethlehem, Pa., also a Mannesmann company, is a well-known international supplier of hydraulic systems and components. Applications for its products are found in every sector of industry.

Mannesmann Tally Corporation, Kent, Wa., has been a premier supplier of computer peripheral equipment and data communications products for over thirty years. The company stresses highly reliable products and is now the foremost supplier of matrix line printers and serial printers to satisfy the growing demand for printers ranging in speed from 50 to 600 lines per minute.



MANUFACTURERS HANOVER TRUST, a major international bank based in New York, with over \$50 billion in assets and a worldwide network of over 100 strategically located offices, subsidiaries and affiliates in 40 countries around the world, is a wholly-owned subsidiary of Manufacturers Hanover Corporation. The ability to marshal large amounts of financing on a worldwide scale has made Manufacturers Hanover an important lender to corporations, banks, governments and government agencies worldwide.

The Bank's International Division provides a wide range of services including depository facilities, export-import trade financing, as well as regular commercial loan and credit accommodations, funds transfer, cash management and foreign



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Other LTV companies are:

Jones & Laughlin Steel, Continental Emsco Company, Vought Corporation, The LTV Corporation, Dallas, Texas.

exchange services. The corporation's foreign loans portfolio of \$19.6 billion is well diversified geographically, with broad representation in Europe, Asia, Latin America and the Middle East.

For international customers interested in U.S. investments the Bank offers money market instruments, coupon and bond collections, portfolio management and securities safekeeping services including Geopac—Manufacturers Hanover's total electronic securities system for immediate and accurate reporting, processing and settlement of securities transactions.

In West Germany, Manufacturers Hanover Trust Company operates full service branches in Frankfurt, Hamburg, Hanover and Duesseldorf, and representative offices in Frankfurt and Munich. Manufacturers Hanover's German offices concentrate on the local market, but also work with multinational corporations in all phases of commercial banking including export financing and buyer's credits.

As the first Western bank to open a branch in Eastern Europe, Manufacturers Hanover's Bucharest Branch specializes in international commercial services related to East European trade and economic development and is uniquely qualified to give advice and assistance to corporations pursuing business opportunities in Romania.

The Bank's traditional lending activities have expanded into leasing, factoring, consumer finance, mortgage banking, industrial and personal installment loans, export financing, investment management, real estate and trust.



DAIMLER-BENZ AG, with its headquarters in Stuttgart, produces and markets Mercedes-Benz cars, commercial vehicles, marine and industrial diesel engines, automotive components, aircraft engines and industrial generating equipment. In 1981, DBAG's employees numbered 188,000 worldwide; its total passenger car and commercial vehicle production exceeded 700,000 units, and its products were sold in 170 countries.

In the North American market, DBAG is represented by Daimler-Benz of North America Holding Company, Inc., located in New York. Organized under this company are:

- Mercedes-Benz of North America, Inc., distributor of Mercedes-Benz passenger

cars, Unimogs and industrial engines in the U.S., with headquarters in Montvale, N.J.

- Freightliner Corp., the manufacturer and marketer of heavy and medium-duty trucks.
- Freightliner Credit Corp. Both Freightliner organizations are headquartered in Portland, Oregon.
- Euclid Inc., manufacturer of off-highway heavy haulers with headquarters in Cleveland.

Mercedes-Benz of North America has a sales and service network comprised of 409 passenger car dealers supported by seven zone offices (Montvale; Chevy Chase, Md.; Jacksonville; Houston; Chicago; Los Angeles; and San Francisco); seven vehicle preparation centers (Newark, Baltimore, Jacksonville, Chicago, Houston, Los Angeles and San Francisco); and five parts distribution centers (Teaneck, N.J.; Baltimore; Jacksonville; Chicago; and La Miranda, Calif.).

MBNA also owns and operates two passenger car dealerships, in New York (Mercedes-Benz Manhattan) and Los Angeles (Mercedes-Benz Hollywood).

MBNA is also the parent company of Mercedes-Benz Canada, distributor of Mercedes-Benz passenger cars as well as class 6 and 7 diesel trucks in Canada, with offices in Toronto and Mercedes-Benz Ser-

vice Corp., which conducts exhaust emission tests in two laboratories in Michigan and Colorado.

Freightliner Corp. holds approximately 10 percent of the U.S. class 8 truck market (over 33,000 lbs. gross vehicle weight) with three assembly plants in North America.

Freightliner also operates a truck assembly plant in Hampton, Va., with an annual capacity of about 6,000 class 6 and 7 trucks (19,501 to 33,000 pounds GVW).

Euclid manufactures off-highway heavy haulers in the United States, Canada, Australia, Belgium and South Africa. The company's product line consists of rear dumpers ranging in capacity from 25 to 170 tons; coal haulers at 120 and 150 tons; and bottom dumpers with capacities of 30, 70 & 110 tons. These are sold to the construction and mining industry around the world.

In the spring of 1982, Freightliner Credit Corp. joined the North American Daimler-Benz family. FCC is a financing unit which provides assistance to the various dealer groups of the North American vehicle distribution companies (MBNA, Freightliner and Euclid).

This is a long way from the beginnings of Daimler-Benz in America, which can be documented back to 1888—or eight years before Henry Ford's famous Quadricycle. In that year, Gottlieb Daimler signed an agreement with the American piano manufacturer, John Steinway, to have Steinway build Daimler's engines in the United States. From 1905 to 1907, after producing light trucks for several years, Steinway's company built cars in its Long Island City, New York, plant. They carried the name "American Mercedes" and used parts imported from Germany along with parts from American manufacturers. Daimler-Benz holdings in the U.S. made a direct contribution to the American economy in the form of taxes, customs and duties, and payrolls of approximately \$240 million in 1981.

The Morgan Bank

MORGAN GUARANTY TRUST COMPANY of New York is the fifth largest commercial bank in the United States. It serves corporations, financial institutions, governments, and individuals throughout the world. Owned by J.P. Morgan & Co. Incorporated, a holding company, its history spans well over a century.

Morgan Guaranty is headquartered at 23 Wall Street in New York City. One of the world's leading international banks, it has offices in major financial centers around the globe and holds interests in local financial institutions, including commercial banks, merchant banking houses, and development banks in 40 countries.

Morgan is known as a "wholesale" bank because it does most of its business with corporations and other institutions of substantial size and complex financial requirements rather than with large numbers of individuals as do "retail" banks. Besides domestic and international banking functions, the scope of The Morgan Bank's operations encompasses the management of trust funds, financial and investment counseling, "money-market" activities, and fiscal agency services.

In Germany, The Morgan Bank has branches in Frankfurt, at Bockenheimer Landstrasse 8, and in Duesseldorf, at Cecilienallee 6, which offer a full range of the bank's services. Kurt F. Viermetz, Vice President, is the general manager for Germany and Peter von Elten, Vice President and Assistant General Manager. L. Reich, Vice President, is responsible for the bank's business with corporate customers in Germany.

In New York, Morgan has a group of officers who specialize in serving the banking needs of the U.S. subsidiaries of major German companies. These officers at Morgan's New York headquarters include: Julie K. Blake, Vice President (212) 483-2379; Renate E. Koch, Assistant Vice President (212) 483-2436; Robert von Tobien, Assistant Vice President (212) 483-1246.



Attractive Transit Buses have been leaving the Lamar plant of NEOPLAN USA Corporation, Lamar, Colorado, daily to MARTA, Atlanta, GA; Milwaukee, WI; Lynchburg, VA; Petersburg, VA; Rockford, Ill; Columbia, MO; Iowa City, IA; Eau Claire, WI; SEPTA, PA.

Presently, production is at three-four buses per day, according to President Heinz Schoellhammer.

The Neoplan success story is less than 18 months old. Located in southeastern Colorado, Neoplan already outgrew its original facility and the company celebrated the opening of an additional Final Finish building in October, 1982.

Coinciding with this event, was the opening of another facility in Montgomeryville, PA, where Neoplan presently builds Articulated Buses for the city of Atlanta, GA. Montgomeryville also serves as a service and spare parts facility for the Philadelphia area.

Over 500 people are employed in the Lamar plant, most of whom are citizens of Lamar and surrounding areas. Every bus leaving the plant is a symbol of hand produced craftsmanship and an example of high technological excellence.

Future

What does the future hold? Manley Bean, one of the sales representatives for Neoplan, explains that in the next three months Neoplan has the opportunity to participate in bids for nearly 2000 buses to be awarded within the United States.

History

Worldwide, Neoplan sales and service facilities are represented in three continents or 47 countries. Buses of all sizes, from super giant to mini, operate on jungle paths, inner-city roads, and superhighways. The steel monocoque honey-comb construction was designed by Neoplan as an adaptable concept, capable of building any size of bus. With this new design also came the name "Neoplan", meaning new plan.

Neoplan has been in existence for 47 years. It was Gottlob Auwaerter, a certified coach builder, who founded the company in Stuttgart, West Germany. Today, the company is still family operated and people-oriented. Said Heinz Schoellhammer, "I like people and I trust people. People working for us know that there is no position more important than that on the production lines. We are all in this together and everyone working in the plant is taking part in producing the best buses there are."



NEW YORK STATE

A balanced economy, excellent financial incentives and a productive labor force combine to make New York State the best place to do business in America.

The State is home to an array of businesses and industries that include everything from manufacturing to services to agriculture, while the city of New York functions as the world's capital of international commerce and finance.

New York's hospitality to business is further enhanced by recent substantial

Look to Klockner-Moeller worldwide.

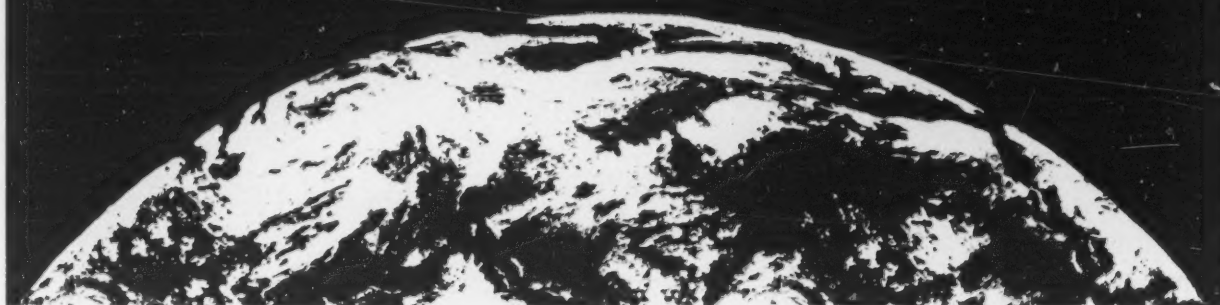
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With 280 branches in 68 countries, Klockner-Moeller offers one of the broadest lines of equipment in the low-voltage field, ranging from electronic programmable controllers to huge installation of Motor Control Centers and Main Distribution Boards. Acknowledged expertise acquired in over 80 years of experience allows the design and manufacture of complete systems to *actual* customer needs. In industry, commerce, and government.

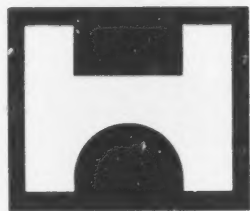
KLOCKNER-MOELLER CORP.
4 Strathmore Road
Natick Industrial Center
Natick, MA 01760
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KLOCKNER-MOELLER GmbH
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reductions in both corporate and personal income taxes. These cuts have totalled over \$7 billion, the largest tax reduction of any state in the U.S.

In addition to its tax incentives, New York State encourages business expansion and investment through the many services offered through the New York State Department of Commerce. These services include: marketing, tax, labor force and financial profiles, energy rates and availability information, site selection services, and transportation analyses. In addition, specially trained ombudsmen cut bureaucratic red tape for businessmen and make their personal and immediate assistance available for launching business projects. Says State Commerce Commissioner George G. Dempster: "Our Departmental staff can give a new business or an expanding business, whether U.S.-based or foreign, all the information needed for a location decision."

New York State has one of the most stable, reliable and productive work forces in America. New York State production workers are so efficient they produce \$4.29 in value added for every dollar of wages they are paid—15% above the national average.

In 1981 more international companies came to New York than to any other state in the U.S. These firms enjoy access to the largest and richest consumer market in the Western Hemisphere—within a 750-mile radius lie more than half the population and personal income of the U.S. and Canada. New York State invites more German companies to join their many compatriots who are profiting from the best business advantages in America.

NIXDORF COMPUTER

NIXDORF COMPUTER CORPORATION is the North American subsidiary of Nixdorf Computer AG, West Germany, a pioneer in the manufacture of easy-to-use work-station oriented computer systems. Founded in 1952 as the "Labor fuer Impulstechnik" by German scientist and businessman Heinz Nixdorf, the firm has grown in the past 30 years to become a major manufacturer of computer systems noted for their ease of use, human engineering and modularity of design.

With over 100,000 installations and reported 1981 worldwide sales revenues of more than \$800 million, Nixdorf ranks today among the leading international computer manufacturers.

The company owes much of its success to innovation and a willingness to provide end

users with a wide range of support services. Nixdorf Computer AG employs a total of over 15,000 personnel, including over 2,000 in the U.S. Nearly two-thirds of this number are engaged in service and support activities adapted to the needs of specific industries and business areas.

The largest of Nixdorf's international subsidiaries, Nixdorf Computer Corporation, is headquartered in Burlington, MA and has sales and service centers in 120 locations in the U.S. and Canada. The company has a full complement of research, manufacturing, marketing, service and administrative personnel totaling over 2,000.

Nixdorf Computer Corporation manufactures and markets a broad range of data entry, distributed processing, and word processing equipment. The expanding Nixdorf product line has achieved broad acceptance in the North American marketplace. Major users include J.C. Penny, McDonnell Douglas, U.S. Steel, Burger King, Pan American World Airways, and the Social Security Administration.



More than 600 manufacturing plants chose OKLAHOMA as their location the past ten years. Here is why:

- (1) Oklahoma has plentiful supplies of gas and oil. Energy costs are low.
- (2) Oklahoma is located in the center of that tier of warm climate states which are most prosperous and fastest growing in America.
- (3) Oklahoma has 33 outstanding technical training schools and five skill centers to train workers for specific jobs in new industries.
- (4) Oklahoma offers a transportation system to suit every need—railroad, truck, air and a waterway exit to the sea. Economical transportation is thus available for both national and international shipping.
- (5) Land costs are low because Oklahoma is a young, vibrant state of energetic people which is just now being settled by industrialists and manufacturers. This year marks only the 75th year of Oklahoma statehood.
- (6) Financial assistance is available through a state agency to support new industries through second mortgage financing of land and buildings, up to 25%.

Come visit Oklahoma—The profitable Place To Be. See the great progress made since Oklahoma was Indian Territory just 75 years ago.



PREUSSAG was founded in Berlin in 1923. The company developed out of a purely mining-oriented company into an enterprise that on its own as well as through participations is principally now engaged in manufacturing and trading metals, in transportation, energy and construction activities worldwide. Preussag's world sales total about 10.5 billion. With DM 350 million in capital stock and approximately 13,000 employees, Preussag AG, parent company of the Preussag Group, ranks among the top 50 industrial enterprises in West Germany.

Preussag's capacities for producing 200,000 metric tons of zinc and 160,000 metric tons of lead annually prove the company a major operator of lead and zinc mines in the Western World, with 50% market share for these metals in the Federal Republic. Preussag's metal business also includes prospecting and exploration, mining and processing of ores as well as the processing of non-ferrous metals.

In 1978 Preussag expanded its business in metals significantly with the acquisitions of a majority in Amalgamated Metal Corporation PLC (AMC), London. The AMC-Group is principally active in international metal trading, zinc smelting, mining, as well as other industrial activities. Recently the Preussag Group also intensified its prospecting, smelting and international trading activities in North America.

The entire transportation interests of the Preussag Group have been combined in the Vereinigte Tanklager-und Transportmittel GmbH (VTG), Hamburg, a wholly owned subsidiary of Preussag. With a fleet of 25,300 tank and other special railroad cars, the company is the largest private lessor of railroad tankwagons in Europe.

In addition, VTG operates supply vessels as well as ships on interior waterways. Its fleet includes more than 90 ships in the Off-shore Supply Association plus more than 60 vessels serving inland shipping.

The activities of the Preussag Group, which in the past were largely concentrated in Germany, have become significantly more international in recent years on the strength of the company's metal, energy, building, and offshore shipping business.

Finally, let it be known that the newly founded Preussag Oil and Gas Exploration Corporation, located in Houston, Tx., along with the Preussag Oil and Gas Production Inc., also in Houston, concentrate their activities on the energy resources area.

Rodenstock

The RODENSTOCK GROUP, with headquarters in Munich, is one of the world leaders in ophthalmic optics. The family-owned company entered its second century of operations in 1977 under the management of Professor Dr. Rodenstock, currently the president of the Federation of German Industries (BDI).

In addition to three plants and eleven branches in Germany with over 6,000 employees, there are three German and eleven foreign subsidiaries with several manufacturing facilities.

Rodenstock products cover a wide range: Ophthalmic lenses, a comprehensive line of plastic and metal frames and sunglasses, precision optics for commercial, industrial and scientific applications including photographic, enlarging, reproduction and X-ray objectives as well as a complete line of ophthalmological refracting and diagnostic instruments and automatic processing equipment for opticians.

In the United States the Group maintains the following operations:

Rodenstock USA, Inc., Danbury, CT
Rodenstock Corporation, Yauco, PR
Rodenstock Precision Optics, Morton Grove, IL

Refracting and diagnostic instruments produced in Germany and the WECO instrument line are represented in the United States by Coburn Optical Industries.

Steady growth and expansion have marked Rodenstock's engagement in the United States in recent years.



Together with its international affiliates, SMS SCHLOEMANN-SIEMAG AG (or for short SMS), a joint venture of the leading German machinery company Gutehoffnungshuette Aktienverein (GHH) and Siemens AG, is engaged in building machinery and plants for the steel and plastics industry.

To meet the machinery needs for (continuous casting equipment, rolling mills and presses) of the steel and non-ferrous metal industries, SMS and its affiliates:

- Concast AG, Switzerland (continuous casting equipment)
- SMS Schloemann-Siemag Inc., Pittsburgh, Pa. (rolling mills)

• Sutton Engineering Co., Pittsburgh, Pa. (presses and straightening machines) market a comprehensive line of equipment, including:

- complete plants
- hot rolling mills
- cold rolling mills
- shearing line equipment
- strip treatment equipment
- continuous casting equipment
- rod and tube extrusion presses as well as forging presses
- plus auxiliary equipment.

Representative of the activities of SMS in the mill equipment sector in North America are SMS Schoemann-Siemag Inc., Pittsburgh and in the press equipment sector Sutton Engineering Co., also in Pittsburgh. In the plastics processing machinery sector, business is conducted by the Battenfeld-Gloucester Group, an SMS member company. It markets plastic processing machinery components and equipment for:

- injection molding
- extruding
- blow molding
- foaming

In the United States the production, distribution, engineering and service activities are performed by:

- Gloucester Engineering Co., Inc., Gloucester, Mass.

Aluminum

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A product attractive in appearance and adaptable to your needs.

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- Battenfeld Corporation of America, Chicago, Ill.

In both areas (iron and steel/plastics processing), SMS and their associates are offering a comprehensive Service Program:

- Consultations on all technical and commercial problems
- Planning to achieve technically and economically optimal solutions
- Custom-tailored designs
- Technically leading products
- Financing—also international
- Cooperation with customer countries or third countries
- Technical and commercial leadership for major projects
- Reliable deadline control and organization in all order transaction phases
- Training of customer personnel
- Service

Detailed information is available from the American Member Companies to the SMS Group who are also available for personal discussions.



THE SCHENKER STORY. The story of the Schenker enterprise is the story of an ingenious package of ideas. The grouping of goods for shipment in consolidated lots for the purpose of achieving lower freight rates, the idea of keeping under control the entire range of services necessary to be performed when offering the customer a true door-to-door movement even beyond national borders. The man who put this idea into practice was Gottfried Schenker (1842-1901). Thus, he became one of the pioneers in the history of modern transportation. On July 1, 1872 he founded, together with other investors, the enterprise Schenker & Co.

Today, on five continents in more than 100 countries and at some 350 places worldwide, the experts of Schenker are at your disposal. 17,000 specialists think, plan and work for you. More than 100 airfreight centers and air terminals make Schenker one of the biggest forwarders in the world. There are Schenker maritime offices in more than 100 of the most important seaports worldwide. The organization has available more than 3,000 vehicles ranging from light trucks to special tractors for heavy loads, a combined storage in excess of 5.5 million square feet and last but not least a staff of experts for the shipment of plants, animals and valuables.

Today Schenkers International, a fully owned subsidiary of The Schenker Group

of Companies, is the largest foreign freight forwarder in the U.S. with offices in Atlanta, Baltimore, Boston, Charlotte, Charleston, Chicago, Dallas, Denver, Detroit, Hartford, Houston, Jacksonville, Los Angeles, Miami, Milwaukee, Minneapolis, New Orleans, New York, Norfolk, Philadelphia, Phoenix, Richmond, Salt Lake City, San Francisco and St. Louis.



Founded in 1969, SCHOTT OPTICAL GLASS INC., Duryea, Pennsylvania has grown to be the United States' foremost manufacturer of scientific optical glass. With the exception of its parent, Schott Glaswerke of Mainz, Federal Republic of Germany, the firm offers the world's most comprehensive variety of optical glasses.

Since the founding in 1884 of the original Jenaer Glaswerk Schott & Genossen, the Schott name has been synonymous with quality and innovation in glass. Schott Optical Glass Inc. follows in this tradition. This is exemplified by the recent completion of Schott's latest expansion—the world's most modern glass research and development laboratory. Schott is now conducting research for Western Hemisphere customers right here in the United States.

Schott Optical Glass Inc., manufactures precision glass products for many scientific applications. The industries served can be broadly separated into the ophthalmic and optical industries.

Among the ophthalmic products manufactured by the firm are spectacle lens blanks made of traditional white and colored glass, as well as photochromics, safety, and special purpose glasses. The firm was awarded the Industrial Research IR-100 Award for developing High-Lite(R), a special glass which allows high prescription spectacle lenses to be made with greatly reduced thickness. Schott has recently expanded its ophthalmic line with the introduction of SunMagic(TM), a photochromic sunglass lens that will be featured as the world's most fashionable sunglasses.

The mainstays of the precision optical product line include glasses offered in such basic forms as slabs, gobs, blocks, strips, and rods. Augmenting these raw glasses are processed products such as laser glass, radiation shielding glass, color filter glass, fiber optics, and CRT display screens.

Schott officers are Dr. Franz E. Herkt, President; Dr. Wolfgang Berthold, Executive Vice President of Operations; Mr. John

G. Gulbin, Vice President of Finance; and Dr. Karl-Heinz Mader, Vice President of Corporate Technical Services.

SCHRÖDER, MUNCHMEYER, HENGST & CO.

SCHRÖDER, MUNCHMEYER, HENGST & CO., is one of the largest private banks in Germany. It is organized as a limited partnership. The equity is owned by the general partners and their holding companies and to a small degree by close associates. Schröder, Munchmeyer, Hengst & Co. was formed on January 1, 1969, through a merger of the two Hamburg private banks of Schröder Gebrüder & Co. and Munchmeyer & Co. as well as the Offenbach/Frankfurt private bank of Friedrich Hengst & Co. Schröder Gebrüder & Co. and Munchmeyer & Co. had both been founded in 1846. Their business was import/export finance as well as the full range of merchant banking. Friedrich Hengst & Co., originally founded as S. Merzbach & Co. in 1832, was dedicated to the finance and development of industry in the Frankfurt area in which important equity participations were sometimes taken.

With limited resources at its disposal, it seemed imperative for the newly merged Schröder, Munchmeyer, Hengst & Co. to identify areas of specialization. This was partly achieved by concentrating on the proven areas of expertise of the predecessor banks and partly by creating new services.

Commercial banking is conducted in the sense of a wholesale merchant bank, concentrated in two locations. It is policy to provide short-term funds, and money needed for inventory rather than plant equipment. This led to a growing effort in short-term foreign trade finance. Activities also include foreign exchange operations, letters of credit, and such.

Except for the Luxembourg subsidiary, Schröder, Munchmeyer, Hengst International S.A., there are no overseas branches.

Although commercial banking will continue to be the main stay of the overall business of the bank, the most satisfactory progress in recent years was achieved by the securities division. Highly professional service is being provided to institutions and substantial individuals at home and abroad. While our research staff is expected to know Germany best, the investment horizon is decidedly international. Our wholly owned subsidiary Schröder, Munchmeyer, Hengst-Investment-GmbH manages mutual funds for inhouse distribution, as well as for institutional clients.

SIEMENS

On October 1, 1982, Siemens Corporation, Iselin, N.J., initiated the decentralization of the company—a diversified electrical/electronics firm serving the medical, communications and components markets.

Siemens-Allis, Inc., Atlanta, GA, the other major U.S. subsidiary of Siemens AG, Munich/Berlin, is a supplier of power engineering equipment. It will continue to operate under its president, Chester W. Diercks, Jr. Siemens Corporation has transferred its business operations into three specialized companies. These companies are each headed by a previous Siemens Corporation Group Vice President. They are: Siemens Medical Systems, Inc., John Diener, President; Siemens Communication Systems, Inc., Bernard Mayer, President; Siemens Components, Inc., Helmut Schwab, President. Siemens Corporation will provide central services to these companies.

"The size and diversity of our operations," Mr. Ziemer, Siemens' former C.E.O., said, "have resulted in our decision to decentralize so that we can accommodate our present and anticipated rate of expansion and maintain our efficiency in serving a consistently broadening marketplace."

Siemens employs 13,000 people throughout the U.S. Approximately two-thirds of

its sales volume is based on domestic products and services.

In its worldwide operations, Siemens AG, Munich/Berlin, estimates its sales volume for the current fiscal year (Sept. 30) to exceed Deutschmark 38 billion, an increase of 10% over last year.

The consolidated sales volume of Siemens Corporation and Siemens-Allis is expected to reach 1.2 billion dollars for the 1981/82 fiscal year.



STINNES CORPORATION of New York, with sales in the U.S. of more than \$2 billion, is continuing its rapid growth by providing a wide range of key products and services to American industry. The company's financial resources, together with its flexibility, service orientation and international scope, have enabled it to become an important contributor to the U.S. economy, with 1,500 employees in 15 plants and numerous regional offices throughout the country.

Stinnes is a major rebuilder and recondi-

tioner of diesel locomotives, large marine and stationary diesel engines, gear boxes and reciprocating pumping and compressing equipment such as that used in natural gas transmission. Stinnes also plays an important role in the world market for used machine tools, including the purchase of excess equipment, plant liquidations and rebuilding of machine tools.

Distribution through a network of more than 1,200 distributors is a rapidly growing service offered by Stinnes. The company acts as a manufacturer's representative and/or master distributor for a wide range of industrial products and supplies including special purpose vehicles, tooling components, machine tools and other metal-working equipment and mill supplies.

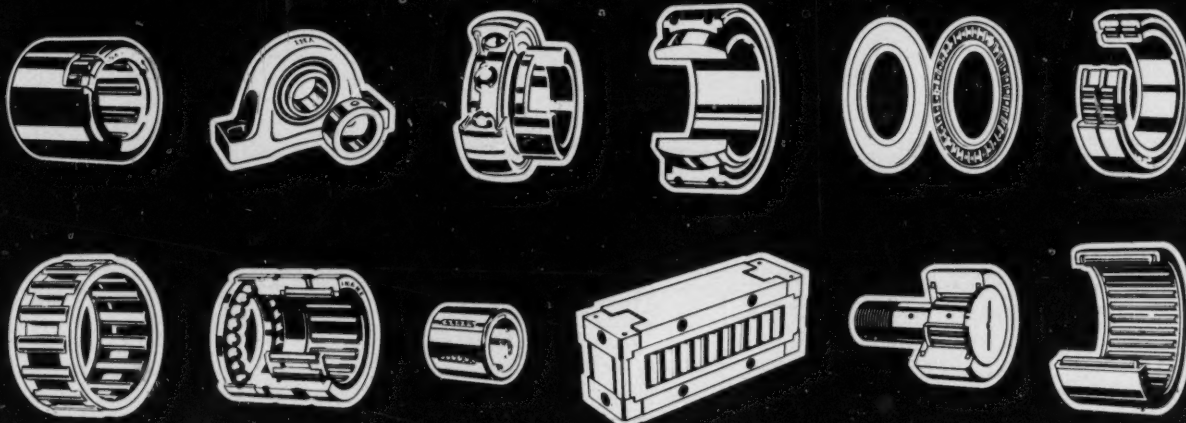
Stinnes' mine equipment division, which was formed in 1889 and has become an important part of the organization, presently operates plants and warehouses in the East, Midwest and Western United States. Equipment fabricated by this division includes diesel and battery-powered personnel carriers and special purpose vehicles. In addition, the division distributes and services equipment for coal and ore mining.

Stinnes' trading operations involve refined petroleum products, petrochemicals, fine chemicals, steam and metallurgical coal, minerals, ferro-alloys, steel and cement. As



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a trading company, Stinnes acts as export/import manager, handling all aspects of international trade for producers who wish to participate in global markets without the associated complexities and risks.

Stinnes Corporation is wholly owned by Stinnes AG which, in turn, is a subsidiary of VEBA AG, the largest public company in West Germany.

Stinnes AG, with annual sales of more than \$8 billion, owns or holds an interest in more than 250 companies, together employing more than 22,000 persons.

VEBA AG, with annual sales in 1981 of over \$20 billion, ranks just ahead of the 10th largest U.S. industrial corporation.



TRANS WORLD AIRLINES, successor to pioneer carriers which first spanned the U.S. continent more than 50 years ago, had revenues of more than \$3.5 billion in 1981 and flew 1.7 billion revenue passenger miles in scheduled service. In terms of traffic, TWA is the fifth-largest airline in U.S. domestic service, and in each of the last five years carried more passengers in scheduled transatlantic service than any other airline.

While TWA's chief source of revenue is airline passengers, it also carries mail and freight on its domestic and international systems, provides management assistance for a foreign airline, and supplies technical and other support services for a number of domestic and foreign carriers.

In its domestic operations, TWA operates flights to 52 U.S. cities, including non-stop service between the East Coast—Boston, New York, Philadelphia and Washington, and California—Los Angeles and San Francisco. In addition, TWA provides service to the Florida resort areas, Arizona and other major destinations in the East, Midwest and West.

TWA's international operations connect leading U.S. cities, including New York, Boston, Chicago, Los Angeles and Philadelphia, with 11 major cities in Europe and the Mediterranean area, including Frankfurt and Tel Aviv.

TWA's currently active fleet includes 183 jet aircraft with 53 widebodies, including 19 Boeing 747's and 35 Lockheed L1011s. Scheduled for delivery beginning in late 1982 are 10 Boeing 767 new-generation, advanced technology widebodies.

TWA is a subsidiary of Trans World Corporation, which is also the parent organization of Hilton International Com-

pany, as well as of leading U.S. organizations in the food service and real estate services businesses. Hilton International had 1981 revenues of \$684 million from the operation of 85 hotels with a total of more than 31,000 rooms in mainland U.S., Hawaii, Guam, Puerto Rico and 43 foreign countries. A new hotel in Karlsruhe this year joins HI facilities now serving the Federal Republic of Germany in Dusseldorf, Mainz and Munich.



THYSSEN INC., a wholly owned subsidiary and member of the West German Thyssen Group, is a holding company for Thyssen interests in U.S. and international trading and has its headquarters in New York City.

The steel products of the Thyssen mills as well as industrial products of various Thyssen enterprises have been sold in the U.S. for many years. As the demand for these products increased, it became necessary for the Thyssen Group to establish a company to facilitate communications, order entries, and more complete penetration between Thyssen and its customers.

Thyssen Inc., was founded in mid-1959. Since its formation, Thyssen Inc. has continually expanded its U.S. and international operations by adding various new lines of activities to the original business of importing steel. As a result, Thyssen Inc.'s organizational set-up was restructured in the beginning of 1981 with the formation of two subsidiaries, Thyssen Steel Co. and Thyssen Carbometal Co. TRT (Thyssen Rheinstahl Technik) and Thyssen Mining Equipment continue to sell and distribute forgings, castings and other industrial products as well as mining equipment, operating as divisions of Thyssen Inc.

Thyssen Steel Co. expanded its direct domestic sales representation with offices in Houston and Los Angeles and with the formation of divisions and/or subsidiaries to handle and establish various additional lines of business.

In the 1970's, Thyssen Steel Co. entered the domestic market of steel warehousing with the establishment of Thyssen Metal Service/Southwest and later on with Thyssen Metal Service/Southeast, Thyssen Metal Service/West Coast and Thyssen Steel Detroit Co. These steel service centers and distributors supply the Southwest, Southeast, Northeast, the Midwest and

Great Lakes areas and the West Coast respectively with rolled steel products.

At the same time, Thyssen Carbometal Co. established a worldwide business in raw materials, mainly coal and iron ore, steel scrap and secondaries, semi-finished steel as well as fertilizers and industrial chemicals.

Today, the combined operations of Thyssen Inc. employ almost 300 people in various parts of the country. The company's activities include international steel and raw material trading, warehousing and steel service center operations in the U.S., as well as sales of industrial products and mining equipment.

With such dynamic growth, Thyssen Inc. has become a major factor in the domestic steel community and in international trading.



Touche Ross International

TOUCHE ROSS INTERNATIONAL (TRI) is a multinational firm of public accountants and management consultants with 391 offices in 86 countries. Established under Swiss law, TRI brings together 55 member firms, united by a common commitment to the highest international standards of quality control. These firms are well-established, locally managed entities, and are therefore knowledgeable about the laws, customs, and business practices of their countries. Together, they act as autonomous but interdependent partners, sharing common standards and technical resources and led by a multinational central management organization.

TRI's professionals provide a full range of management consulting, tax, accounting and auditing, and other services.

Our management consultants are experienced in solving business problems. Among other services, they develop and assist in the implementation of EDP, financial, accounting, and control systems. They advise on organization structures and conduct feasibility studies of planned acquisitions and other ventures.

In addition, they perform strategic planning for business enterprises and design and implement operations improvements for troubled companies. Economic consultations to regulatory agencies and litigation support to attorneys are also services offered.

Our tax professionals provide a full range of advisory and tax compliance services. They offer tax planning for businesses and individuals operating both nationally and

internationally. They advise and assist clients in complying with local, national, and international tax laws and in dealing with taxation authorities.

In accounting and auditing, we are experienced in reporting on financial statements to meet local, national, and international requirements. The firm has developed a worldwide audit approach—the Touche Ross Audit Process—in order to provide clients with consistent, efficient, and cost-effective service wherever they operate.

TRI member firms provide a range of other services. These services include counseling on insolvencies and liquidations, actuarial benefits consulting, trusteeship services, and business interruption consulting in support of insurance claims.



TRANSATLAS AIR-DIVISION, head-member company of the vital INTERNATIONAL TRANSATLAS-GROUP of 120 registered and nominated member-companies worldwide, is the solution for your airfreight-export/import affairs, wher-

ever on the globe.

Transatlas Air-Division, with its main office at Stuttgart-Airport, was founded in 1969 by its presidents, W. Korbach and O. Czeschka, and has since rapidly grown from a local South German airfreight-forwarder, into an international forwarding organization, with its own offices at Frankfurt/Main-Airport and New York's JFK International Airport.

Transatlas Air-Division, Stuttgart, started the International Transatlas-Group by selecting worldwide the most active, specialized, independent airfreight-forwarders, most of them acting as air-consolidators, customs house brokers and trucking companies.

Statutes were worked out, that each applicant or selected company had to accept and to sign, in reference to terms of handling, service and financial procedures, in order to become a member of the International Transatlas-Group.

This was done to ensure utmost reliability, the guarantee of 1st class service and financial safety of applicants, and the acceptance and confirmation of such new member-companies to cooperate with the group-members, worldwide.

The goal of the group is and was the cooperation between all group-members, the intention is to install new consolidated

services with other group-members and/or to bring in existing consolidations and the development of such, with the receiving group-member.

The competitive import/export airfreight service, sold worldwide by the International Transatlas-Group, has led to recognition by our international customers. Being a member of the International Transatlas-Group today means representing the trademark for better services, worldwide.

Many customers have found that using the services of members of the International Trans-Atlas Group means additional profit in any currency.

Our offices are well equipped to handle all kinds of airfreight, export and import, brokerage, insurance and charter services.

We offer the lowest rates available and almost daily departures in our independently scheduled consolidations worldwide—on IATA and non-IATA air-carriers, according to your choice, telex controlled by the departure and arrival station with reconfirmed delivery details handled by our international network of the members of the International Transatlas-Group.

Our company in New York, AERO SPACE CARGO INC., a division of TRANSATLAS Germany, offers clearance and delivery at competitive rates, Monday through Friday (holidays excluded) within

Touche Ross International

The multinational professional services organization

In 85 countries, with 390 offices – including many throughout Germany – Touche Ross International provides accounting and auditing, tax, and management consulting services around the world.



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Zwiesel
Germany**

**Jewels
for Your
Table**



A collection of more than 6,000 articles for the world tabletop. Annually, creation of over 70,000,000 crystal stems, to 60 nations, by 1,900 artisans, with dedicated care. Now, CLASSIC PILSNER, a ready recipient for the finest brews. From Cristallerie Zwiesel, 41 Madison Avenue, New York, NY 10010

24-36 hours after landing of goods. Container loads and complex cargo are included in our door to door delivery at competitive onforwarding rates by truck or air.

Aero Space Cargo Inc. also offers the lowest consolidation rates from JFK New York to various destinations worldwide; and personalized individual services, including pickup on time and the guarantee of proper documentation.

ASC also acts as a seaport broker, and is represented by reliable agents at all U.S. North and West coast seaports.

The name Transatlant Air-Division stands for German quality in air-transport.

We live up to our slogan: "The confidence of those we serve, is the foundation of our progress." Please try us—you will like our services.



UNION-TRANSPORT GmbH, with its Headquarters in Duesseldorf, West Germany, was established in 1926.

It has been developed into a full-fledged transportation organization with approximately 2000 employees, providing all phases of the forwarding industry.

In 1959, Union Air Transport GmbH, an affiliate of Union-Transport GmbH, was established in the United States of America and is headquartered in New York.

Since its beginning, Union Air Transport has rapidly expanded and now operates throughout North- and South America as well as the United Kingdom, with annual sales in excess of 50 million US dollars.

Adding further to the company's growth and success, Union Air Transport also operates as a licensed Custom House Broker.



V.A.W. of America, Inc. has been operating in Ellenville, New York since October 1965, the company, wholly owned by Vereingte Aluminum-werke AG-Bonn, is a major producer of aluminum billet and semi-fabricated products. The V.A.W. Ellenville plant consists of an aluminum casting operation for the production of over 100 million pounds of billets in various sizes and different alloys. This constituted the basis for construction of the firm's extrusion presses and its tube drawing and rigid conduit production facilities.

Since 1979 V.A.W. has been operating a second plant in the United States, located in St. Augustine, Florida. This plant produces the same range of extruded and drawn aluminum products and is equipped with the most advanced electro-static paint line, enabling V.A.W. to supply coated aluminum extrusions and tubing.

In the area of aluminum extrusions, V.A.W. operates six large presses covering the entire range of shapes from small, lightweight profiles for the building market, to heavy and complex configurations in various aluminum alloys for the construction, transportation and electrical industries. A major specialty in extrusions has been the development of close tolerance tubing and pipe, used for example in lighting standards and sail boat masts. Through years of technical development, V.A.W. expertise in these areas has led to major breakthroughs for the fabricating industry.

Another major product line is drawn aluminum tubing. The availability of advanced equipment (such as cable hydraulic draw benches), combined with technical leadership in the area of tube drawing, has enabled V.A.W. to become a major supplier of tube for consumer durable products and, in particular, outdoor lawn and garden furnishings and other specialty markets.

Over the years, V.A.W. of America has achieved a position as a leading supplier of rigid aluminum conduits for the electrical industry, and distributes aluminum conduits through a network of warehouses throughout the United States.

The V.A.W. operations are backed by a complete R & D and testing laboratory. The laboratory utilizes diverse testing equipment, including ultra-modern electro-spectrographic analyzing machinery.

V.A.W. plans to apply its knowledge and expertise acquired through the years to ensure its continued position as a major supplier of extrusions and tubing to the growing aluminum market in the United States.

VILLEROY & BOCH

VILLEROY & BOCH TABLEWARE LTD., 41 Madison Avenue, New York, New York.

Originally founded as Ceramar Incorporated in 1969, the operation was converted into a wholly owned V&B subsidiary in 1976 under the direction of Carlo H. Piccoli. V&B Tableware is charged with the marketing of all V&B branded dinnerware, giftware and collectibles, as well as Heinrich porcelain dinnerware, and a growing fine

crystal capability most recently augmented by the parent company's acquisition of Josephinehutte glassworks.

V&B products can be seen in showrooms in Boston, Minneapolis, San Francisco, Los Angeles, Dallas, Atlanta, Chicago, Denver, Ann Arbor, Indianapolis, and the organization's 41 Madison Avenue location in New York. In all, 12 sales organizations market V&B products in America, with a field force of over 50. An ongoing, strong consumer advertising campaign was further augmented in 1982, including major schedules in *The New Yorker*, *Architectural Digest*, *Gourmet*, *Food & Wine*, *House Beautiful*, *Modern Bride*.

The thrust of V&B's consumer and trade communications is perhaps best expressed in the campaign theme, "More than a little continental the look most found in the fashionable households of France, Belgium and Germany."

VILLEROY & BOCH (USA) INC., Pine Brook, New Jersey. Founded in 1975, and under the direction of Alfred A. Pangels, President and Executive Vice President, Kurt Scholler, the 1978 move to the current General Headquarters effected a 400% increase in warehouse capacity for the rapidly expanding operation.

A New York City showroom was quickly followed in 1980 with a full-operations West Coast facility in Anaheim, California, incorporating showrooms, sales offices and warehousing to serve the Pacific, Rocky Mountain and Midwest territories.

To direct Villeroy & Boch's nationwide marketing of sanitaryware, William J. Schmidt joined the company in 1982 as Vice President—Sales & Marketing, Plumbing Products Division.

The company's distribution network is coast to coast, touching every state through approximately 250 dealers and distributors. In spite of a slowdown in the building industry during 1981, Villeroy & Boch's title and sanitary sales increased by 40%.

National public relations programming has recently been incorporated as an extension of the marketing communications arm and is targeted toward both trade and consumer audiences.

The parent company, VILLEROY & BOCH, is over 230 years old and is one of the oldest privately-owned companies in Europe, with 16,000 employees in 18 factories located in Germany, France, Italy and Luxembourg. It is headed by L.G. von Boch, representing the eighth generation of Boch family to serve as chief executive officer.



VOLKSWAGEN OF AMERICA, INC. was formed in October 1955 as a wholly-owned subsidiary of Volkswagenwerk AG, Wolfsburg, West Germany. Originally established as the official importer of Volkswagens to the United States, VWoA has also served as the official importer of Porsche sports cars and Audi models since the establishment of its Porsche Audi Division in 1969.

VWoA corporate headquarters is located in Warren, Michigan. Marketing of cars imported and manufactured by VWoA is through offices in Englewood Cliffs, New Jersey, and distributing companies which serve two separate dealer networks—one authorized to sell and service VWs and the other handling Porsche and Audi vehicles.

Manufacturing divisions within VWoA include an assembly plant in Westmoreland County, Pennsylvania, a sheet metal stamping plant in South Charleston, West Virginia and an air conditioning and automotive component plant in Fort Worth Texas. VWoA has another production facility in Sterling Heights, Michigan, which is being

enlarged, and renovated for future production.

Volkswagen of America also established separate financial subsidiary companies in 1981 to provide automotive financing support for its VW and Porsche Audi dealers. The subsidiaries are VW Financial Corporation, which provides required financial funding, and VW Credit, Inc., which, in agreement with Chrysler Financial Corporation, implements a program of dealer wholesale financing as well as customer retail lease financing.

Under the direction of Noel Phillips, President and Chief Executive Officer, VWoA is also responsible for developing national sales programs, preparing and distributing technical and sales literature, developing and supervising training programs for service mechanics, maintaining inventory control over replacement parts, producing and placing national advertisement, administering insurance programs and conducting many other activities to ensure the continued success of Volkswagen, Porsche and Audi in the U.S. market.

Ward Howell International

During the past year the demand for executives changed quite dramatically due to the worldwide recession. Our German clients did not expand their US facilities very much and there seemed to be far fewer new companies entering the market from Europe. Domestically, both US and European headquartered business confined their "executive search" activities to senior management here in America. The demand for Vice Presidential Marketing Executives, Chief Financial Officers and Subsidiary Presidents is substantial, as is the need for Senior Materials Management people. It is interesting to note that better than half the positions filled in 1982 have been at the \$100,000 and over level, while the staff positions (personnel assistants, public relations, financial analysts and corporate planners) at the \$60 to \$80,000 range are not being filled when vacant.

In mid 1982, we were fortunate to be able to open an office in Dallas to serve that prosperous geographic region and to enhance our capability in the energy field. This three man office is headed by Steve Garrison. Although the year 1982 will be as good or better than previous years, we are noticing an increase in new assignments and anticipate a record business year for 1983.

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the respect of customer and
competitor alike:**



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and



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WestLB

WESTDEUTSCHE LANDESBANK ranks among the large banks in the world with a total Group business volume of more than DM 150 billion. It was formed in 1969 as a result of a merger of the Rheinische Girozentrale and Provinzialbank, an institute based in Duesseldorf with more than a century of banking experience, with the Landesbank fuer Westfalen Girozentrale, founded in Muenster in 1832.

WestLB is incorporated under public law. Its owners and guarantors are the State of North-Rhine Westphalia, the regional authorities of the Rhineland and of Westphalia-Lippe, and the association of the regional Sparkassen in those two areas. WestLB is both clearing and partner bank to the 163 Sparkassen of North-Rhine Westphalia, whose assets total DM 157 billion. It acts also as a state and municipal bank. By virtue of its large portfolio of fixed-interest mortgages and the savings contracts of its building and loan association (LBS) WestLB is one of Germany's most significant construction banks.

As a bank with an emphasis on long-term financing, WestLB is able to provide its private, commercial and public-sector clients both in Germany and in foreign countries with a comprehensive range of financings and investment services. In addition to export and import financings, WestLB's range of services for its internationally active clients includes international loan and bond financings in D-Mark and Euro-currencies, as well as financings in local currencies through its branches and affiliates abroad. This network also enables WestLB to meet clients' needs for cover in all major currencies and to handle their international payment transactions. On the basis of its cooperation agreement with the Sparkassen, WestLB increasingly handles the foreign business of Sparkassen clients.

As a major force in the domestic and foreign capital markets, WestLB is in a position to offer investment opportunities in a

broad variety of bond issues as well as in shares and mutual funds. The Bank's range of services for investors also includes portfolio management and the launching of special investment funds.

WINTER

The Hamburg family business of ERNST WINTER & SOHN and the world's third biggest producer of diamond tools for the engineering industry, founded in 1847, is now entering the American market. As Dr. Georg Winter and Ernst Michael Winter, both members of the management, explained, a production centre is being set up in South Carolina with a capital expenditure of DM 13.8 m for the manufacture of diamond rollers for the aircraft and automobile industry as well as of inner diameter saws for the electronics industry. The manufacture is intended solely for the US market and will be started October 1, 1982.

The fact that the US automobile industry has been forced to change to smaller types of cars was, as Georg Winter explained, one of the reasons for his firm's decision to invest. Smaller cars mean in many of the technical sectors smaller tolerances, which can only be achieved by the use of special diamond dressing rollers.

In 1981 the Winter Group reached total sales of DM 144 m after DM 135 m in 1980. More than 50 per cent of consolidated sales were achieved abroad. Affiliated companies were established in France, Italy, Spain, Austria, the United States, South Africa and Brazil.

One main field of activity is concentrated on research and development. In conjunction with the Technical University of Aachen and German manufacturers of machinery, Winter is working with the support of the Federal Ministry of Research on a project for high speed grinding with "cubic crystalline boron nitride"; this process has a

definite future in serial and mass production in the ball bearing, machine tool and automobile industries.

Winter is also deeply concerned in making itself even less dependent on natural diamonds. Wilhelm Winter pioneered the use of synthetic diamond after the war. Since then, the group has operated heavily in this sector and 85 per cent of the diamonds it uses are synthetic. The group processes yearly 5.5 million carat industrial diamonds.



OTTO WOLFF

OTTO WOLFF, headed by the Cologne-based OTTO WOLFF AG, is an international enterprise. The Group operates in a wide field of trade and production, with steel processing and machine and industrial plant installations representing the company's strongest sectors.

One prime center of activity is the production and distribution of tinplate, cold rolled sheet and electrical sheet. Incorporating all the latest functional technology, these materials meet the diverse demands of the packaging, automotive and electrical industries.

Rolling mill products such as profile steel, reinforcing bars and other construction elements, wire mesh, screws, but plastics goods as well, round out the program and show the emphasis laid on supplies in the fields of infrastructure.

Another significant part of the Group's activities involves construction of highly specialized and complex technical apparatus. Whether in precision machines or measuring instruments, drilling rigs, earth-movers or material handling systems, heavy machines or complex industrial equipment, Otto Wolff's predominance in achievement and technology is beyond question.

With a constant eye on the market, ready to adapt Group structure to change, with first rate service and distribution perfor-

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SELLING OR BUYING, YOU INCREASE YOUR PROFITS, IF WE DO THE FLYING

mance and with strong financial power, Otto Wolff is a reliable and trustworthy partner.

International marketing, based on a range of the Group's own overseas subsidiaries and agencies, guarantees rapid adaptation to current market trends.

The United States market has been acquiring growing importance in Otto Wolff's international operations as the continuous expansion of the US-network shows. Today the Group is represented by the Otto Wolff US Holding Corp., Houston/Texas affiliated to which the Otto Wolff America Inc., Chicago, San Francisco and Houston/Texas, cover the key regional areas.

With Hurricane Industries Inc., Houston/Texas, the first production unit in the States joined the Group in 1980. Their diversified program in steel bars, drawn wire, wire rods and mesh and their strong sales organization, are expected to give major impulses to Otto Wolff US business activities.



CARL ZEISS, INC., is part of the worldwide Zeiss organization headquartered in West Germany. Since its establishment as the U.S. subsidiary of its German parent 57 years ago, Carl Zeiss, Inc., has constantly expanded its presence in the American market as a sales, marketing, and service organization of precision products for industry, for the scientific community and for the consumer—products which have set world standards for nearly one and one-half centuries. Zeiss' commitment to uncom-

promising excellence has consistently defined the state-of-the-art in such diverse areas as precision machines for industrial measuring, optical systems for industrial applications, surveying instruments, aerial cameras, light and electron microscopes, surgical microscopes, ophthalmic diagnostic instruments, telescopes and planetaria—to name a select few. Beyond the Zeiss industrial, medical, and scientific products, Zeiss also offers a line of riflescopes, binoculars, sporting glasses, low vision aids and high fashion eyeglass frames and sunglasses available through professional ophthalmic dispensers. With offices in principal metropolitan areas throughout the country, the Carl Zeiss, Inc. organization has grown to nearly 400 employees nationwide.

Zeiss' unique capabilities in combining fine mechanics, precision optics and advanced electronics have paved the way for significant industrial advances, most recently in the field of metrology, a science which dates back to man's first need for a formal method of linear measurement. The Industrial Measuring Technology Division of Carl Zeiss, Inc. markets high performance, computer-controlled coordinate measuring machines. Incorporating a unique probing system designed by Zeiss, measurements can now be made in the incredible range of millionths of an inch. These machines, used as a quality control tool for cost-effective measurement of precision production parts such as turbine blades or components of an internal combustion engine, are rapidly replacing the time consuming task once required of measuring parts manually with traditional hand-held gauging instruments. Today, Zeiss provides an entire industrial measuring technology product line to serve the needs of diverse major industries, such as automotive, aeronautic, computer, defense and energy. Another Zeiss achievement which advances the state of technology.



Accident prevention devices of all kinds should protect people and property against every kind of danger: fire-extinguishers, lightning rods, handrails, and life-preservers.

In this regard, special security technology affords: the protection of property from the intentional attacks of those who plan strategically to the extent that the endangering of human life is no obstacle.

The variety of motives and executions render literally everyone and everything in need of protection.

The DOM Security Concept will comprehensively solve this task. A great number of different product items as well as mechanical detection systems supply the latest essential technology for each security problem.

In order to detect potential invasion before it's too late, we offer, in addition to mechanical/electronic components of the DOM system, a variety of surveillance systems to serve every installation requirement.

If you have a problem with mechanical security or with electronic surveillance, write to us.

We will refer you to a reliable partner in your area who will supply you with advice and service.

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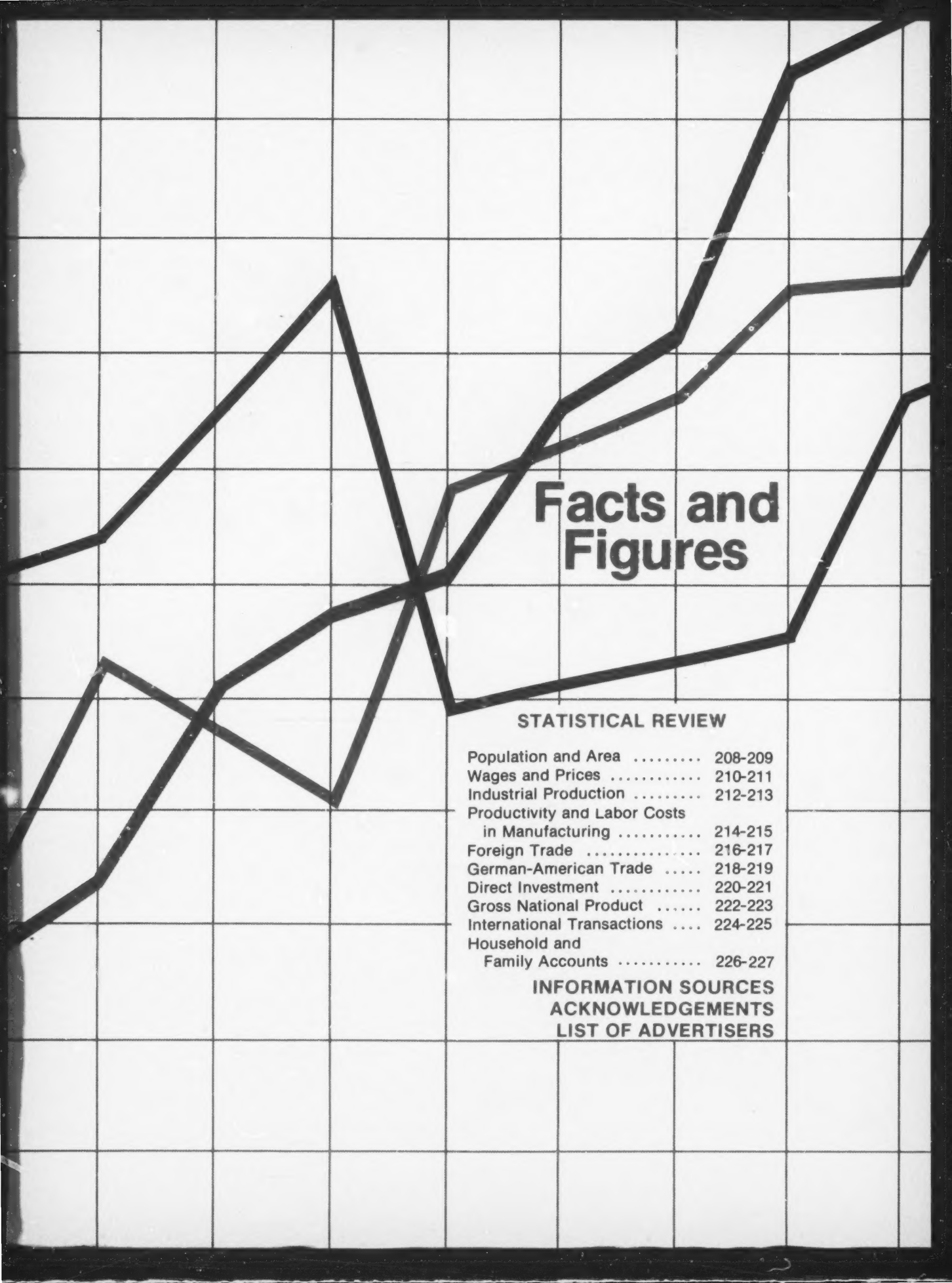
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Often the key to unlocking potential lies in the development and application of new technologies. ☐ Krupp, one of West Germany's leading industrial groups with worldwide sales in 1981 of \$7.4 billion and more than 82,000 employees, is in the forefront of technological advances across a broad spectrum of specialized industries ranging from plantmaking, steelmaking and mechanical engineering to shipbuilding, trading and services. Krupp engineers plan, design and construct facilities across the globe that require vast technical capabilities, know-how and experience. ☐ Here in the United States, Krupp technology has been contributing to efficient production for many years. For example, Krupp has designed and installed Electric Arc Furnaces with extremely short tap-to-tap times. Our Continuous Casting and Rolling Mill equipment aids the non-ferrous metals industries in obtaining wires with excellent drawing capabilities. Krupp Automatic Stacker/Reclaimers have increased efficiency in transloading bulk materials at utilities and port facilities. U.S. customers rely on our modern and well-proven Coal Gasification Technology. Dependable Krupp MAK Diesels and Krupp Atlas Navigational and Survey equipment serve on board merchant ships and fishing vessels. Krupp Specialty Steels and Steel Forgings are used by U.S. industries from coast to coast. ☐ For more information on how Krupp Technology might help your firm to unlock its potential, please write. Krupp International, Inc., 550 Mamaroneck Avenue, Harrison, New York 10528. Telephone (914) 381-2000. Telex WU 131513 Krupp harr.

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Facts and Figures

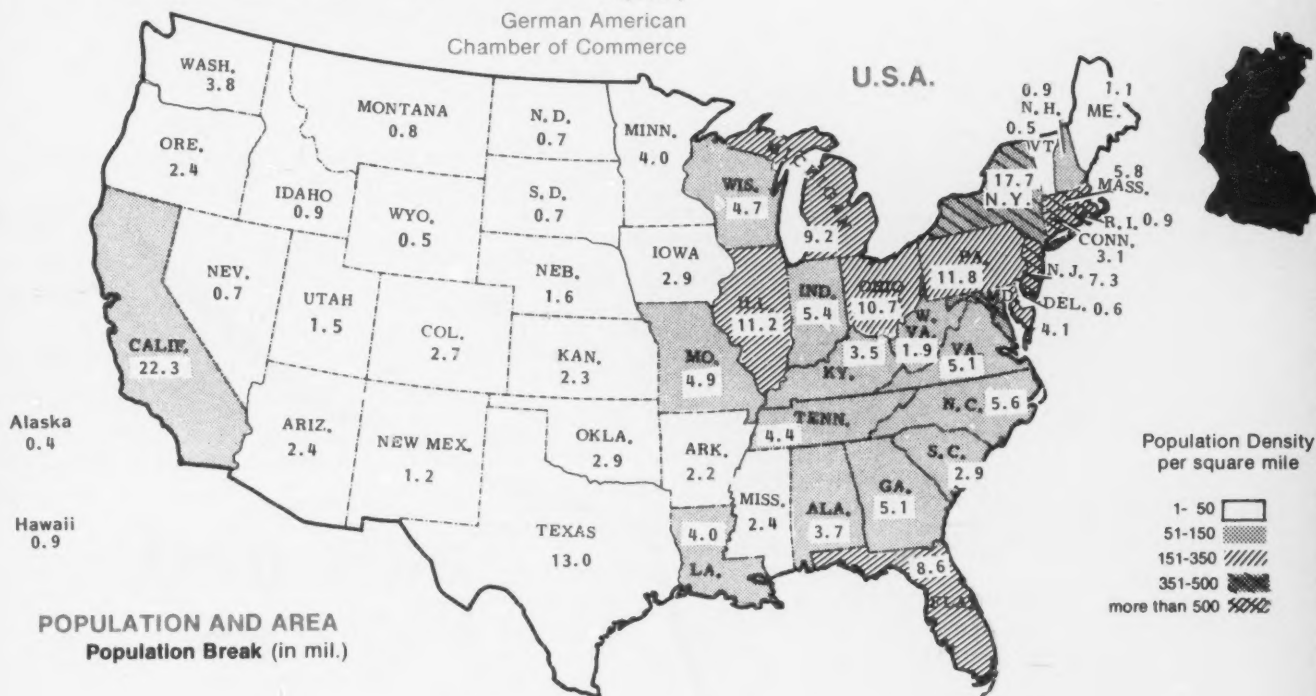
STATISTICAL REVIEW

Population and Area	208-209
Wages and Prices	210-211
Industrial Production	212-213
Productivity and Labor Costs in Manufacturing	214-215
Foreign Trade	216-217
German-American Trade	218-219
Direct Investment	220-221
Gross National Product	222-223
International Transactions	224-225
Household and Family Accounts	226-227

**INFORMATION SOURCES
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Statistical Review

Prepared by
German American
Chamber of Commerce



POPULATION AND AREA
Population Break (in mil.)

	1960	1970	1975	1978	1979	1980	1981
Area (in 1000 sq. miles)							3,618.5
Population (in mil.)	180.7	204.9	213.5	218.6	220.6	226.5*	227.9
—male	89.3	100.3	104.2	106.5	107.5	110.0	110.5
—female	91.4	104.6	109.3	112.1	113.1	116.5	117.4
By age (in %)							
—under 18	35.4	34.2	30.9	29.0	28.4	28.2	28.1
—between 18-65	55.2	56.0	58.8	60.0	60.4	60.5	60.7
—over 65	9.4	9.8	10.3	11.0	11.2	11.3	11.2
Households (in mil.)	58.2	63.4	71.1	76.0	77.3	79.1	79.3

Source: U.S. Department of Commerce

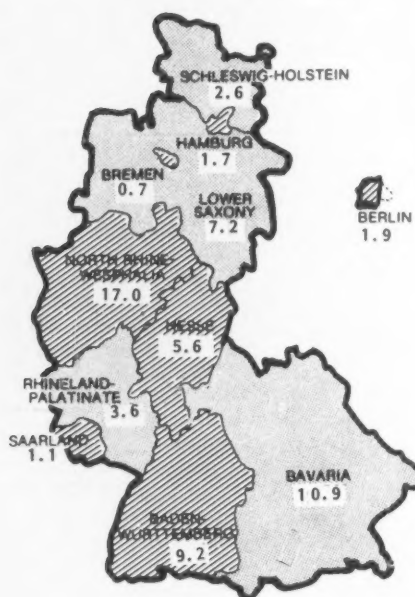
*Based on new benchmark levels. Not comparable with previously published data.

Labor Market (in 1000)

Period	Civilian Labor Force	Employment					Unemployment	
		Total	Manu- facturing	Agric.	Gov.	Other	Unemployed	%
1960	69,628	65,778	16,696	5,458	8,358	35,266	3,852	5.5
1970	82,715	78,627	19,349	3,462	12,561	43,255	4,088	4.9
1971	84,113	79,120	18,572	3,387	12,887	44,274	4,998	5.9
1972	86,542	81,702	19,090	3,472	13,340	45,800	4,840	5.6
1973	88,714	84,409	20,054	3,452	13,742	47,161	4,304	4.9
1974	91,011	85,936	20,016	3,492	14,285	48,143	5,076	5.6
1975	92,613	84,783	18,347	3,380	14,720	48,336	7,830	8.5
1976	94,773	87,485	18,997	3,297	14,971	50,220	7,288	7.7
1977	97,401	90,546	19,647	3,244	15,079	52,576	6,855	7.0
1978	100,420	94,373	20,332	3,342	15,476	55,223	6,047	6.0
1979	102,908	96,945	21,062	3,297	15,920	56,666	5,963	5.8
1980	104,719	97,270	20,304	3,310	16,248	57,408	7,448	7.1
1981	108,670	100,397	19,676	3,368	15,917	61,436	8,273	7.6
1982, June	110,666	100,117	19,120	3,488	15,852	61,657	10,289	9.8

Source: U.S. Department of Labor
Council of Economic Advisors

GERMANY



POPULATION AND AREA Population Break (in mil.)

Population Density
per square mile

351-500
more than 500

POPULATION AND AREA Population Break (in mil.)

Area (in 1000 sq. miles)	1960	1970	1975	1978	1979	1980	1981 96.0
Population (in mil.)	55.4	60.7	61.8	61.3	61.4	61.7	61.8
—male	26.0	28.9	29.4	29.2	29.3	29.5	29.6
—female	29.4	31.8	32.3	32.1	32.1	32.2	32.2
By age (in %)							
—under 18	25.3	27.1	25.8	24.3	23.6	23.3	22.0
—between 18-65	63.8	59.7	59.6	60.3	60.7	60.8	61.0
—over 65	10.9	13.2	14.6	15.4	15.7	15.9	16.1
Households (in mil.)	19.3	22.0	23.7	24.2	24.5	24.8	25.1

Source: Statistisches Bundesamt, Germany

Labor Market (in 1000)

Employment

Unemployment

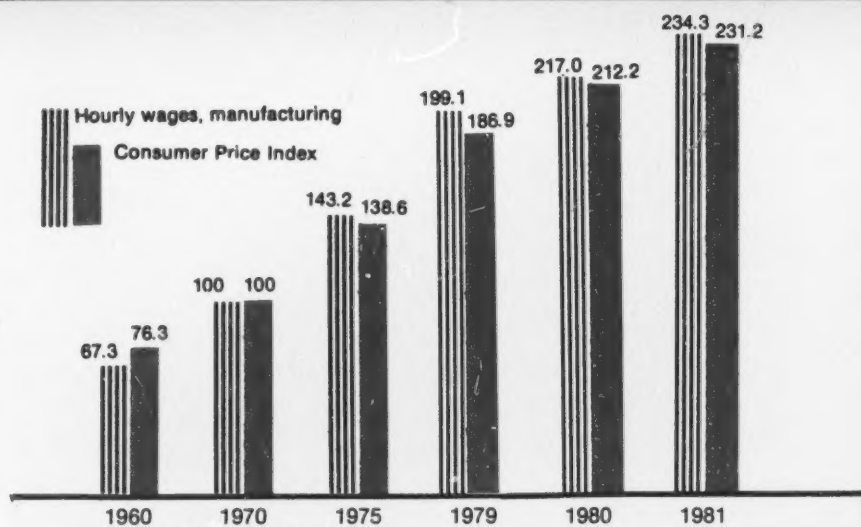
Period	Civilian Labor Force	Total	Manu- facturing	Agric.	Gov.	Other	Unemployed	%
1960	26,518	26,247	12,518	3,623	2,434	7,672	271	1.3
1970	26,817	26,668	13,024	2,262	3,077	8,305	149	0.7
1971	26,910	26,725	12,989	2,144	3,198	8,394	185	0.9
1972	26,901	26,655	12,815	2,038	3,296	8,506	246	1.1
1973	26,985	26,712	12,830	1,954	3,376	8,552	273	1.3
1974	26,797	26,215	12,398	1,882	3,421	8,514	582	2.6
1975	26,397	25,323	11,615	1,823	3,509	8,376	1,074	4.7
1976	26,136	25,088	11,379	1,743	3,505	8,461	1,060	4.6
1977	26,074	25,044	11,330	1,656	3,477	8,581	1,030	4.5
1978	26,223	25,230	11,359	1,608	3,514	8,749	993	4.3
1979	26,449	25,573	11,482	1,558	3,584	8,949	876	3.8
1980	26,684	25,795	11,588	1,518	3,613	9,076	889	3.8
1981	26,927	26,680	11,358	1,495	3,628	9,199	1,271	5.5
1982, June	-	-	-	-	-	-	1,650	6.8

Source: Statistisches Bundesamt, Germany

U.S.A.

WAGES AND PRICES

Wages and inflation (1970=100)



Source: U.S. Department of Labor

Gross Hourly Earnings (in \$)

Period	Manu- facturing	% chg. from year earlier	Primary Metal Indus.	Chem.	Mech. engin.	El. engin.	Transp. equip.	Apparel
1960	2.26	+3.2	2.81	2.50	2.55	2.28	2.74	1.59
1970	3.35	+5.1	3.93	3.69	3.77	3.28	4.05	2.39
1975	4.83	+9.3	6.17	5.37	5.36	4.58	6.02	3.19
1976	5.22	+8.1	6.80	5.89	5.76	4.91	6.54	3.41
1977	5.68	+8.8	7.40	6.43	6.25	5.39	7.28	3.62
1978	6.17	+8.6	8.20	7.01	6.77	5.82	7.91	3.94
1979	6.70	+8.6	8.97	7.60	7.32	6.32	8.54	4.23
1980	7.27	+8.5	9.77	8.30	8.00	6.95	9.32	4.57
1981	7.98	+10.5	10.81	9.05	8.81	7.56	10.33	4.99

Source: U.S. Department of Labor

Consumer Price Index (1967=100)

Period	All Items	% chg. from year earlier	Housing (Rent)	Food	Util.	Apparel	Transp.	Health care	Enter- tainment
1960	88.7	+ 1.6	91.7	88.0	95.9	89.6	89.6	79.1	-
1970	116.3	+ 5.9	110.1	114.9	107.6	116.1	112.7	120.6	116.7
1975	161.2	+ 9.1	137.3	175.4	167.8	142.3	150.6	168.6	152.2
1976	170.5	+ 5.8	144.7	180.8	182.7	147.6	165.5	184.7	159.8
1977	181.5	+ 6.5	153.5	192.2	202.2	154.2	177.2	202.4	167.7
1978	195.4	+ 7.7	164.0	211.4	216.0	159.6	185.5	219.4	176.2
1979	217.4	+11.3	176.0	234.5	239.3	166.6	212.0	239.7	187.6
1980	246.8	+13.5	191.6	254.6	278.6	178.4	249.7	265.9	205.3
1981	272.4	+10.3	216.5	272.1	335.5	189.4	291.9	312.9	229.7

Source: U.S. Department of Labor

Producer Price Index (1967=100)

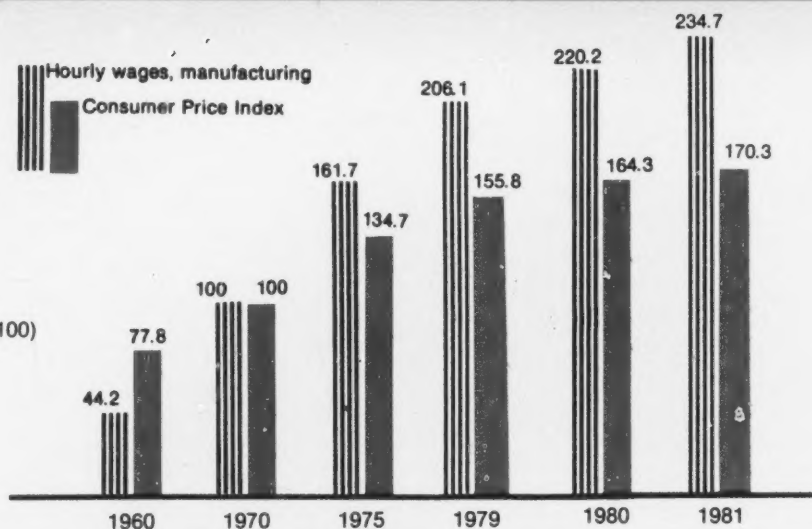
Period	All commod.	% chg. from year earlier	Farm products	All ind. commods.	Iron & steel	Chems.	Machs. nonel.	Processed foods
1960	94.9	+ 0.1	97.2	95.3	97.1	101.8	-	89.5
1970	110.4	+ 3.7	111.0	110.0	115.1	102.2	-	112.0
1975	174.9	+ 9.2	186.7	171.5	200.9	181.3	173.3	182.6
1976	183.0	+ 4.6	191.1	182.4	215.8	187.0	185.0	178.0
1977	194.2	+ 6.1	192.5	195.1	230.3	192.7	197.7	186.1
1978	209.3	+ 7.8	212.5	209.4	253.6	198.8	214.3	202.6
1979	235.6	+12.6	241.4	236.5	283.5	222.3	234.2	222.5
1980	268.8	+13.8	249.4	274.5	305.2	260.3	263.0	241.2
1981	293.4	+ 9.9	254.9	304.1	338.8	287.8	287.0	249.7

Source: U.S. Department of Labor

GERMANY

WAGES AND PRICES

Wages and inflation (1970=100)



Source: Statistisches Bundesamt, Germany

Gross Hourly Earnings (in DM)

Period	Manu- facturing	% chg. from year earlier	Iron & Steel	Chem.	Mech. engin.	El. engin.	Road Motor Vehicles	Apparel
1960	2.69	+10.2	3.30	2.70	2.78	2.42	3.02	1.94
1970	6.09	+13.4	6.83	6.51	6.32	5.48	6.84	4.54
1975	9.85	+ 7.9	10.47	10.51	10.39	9.06	11.28	7.38
1976	10.49	+ 6.5	11.14	11.32	10.98	9.61	12.02	7.83
1977	11.27	+ 7.4	11.92	12.21	11.83	10.38	12.96	8.40
1978	11.88	+ 5.4	12.47	12.85	12.38	10.89	13.65	8.88
1979	12.55	+ 5.6	13.23	13.42	13.07	11.50	14.29	9.28
1980	13.41	+ 6.9	14.00	14.13	13.97	12.33	15.28	9.86
1981	14.19	+ 6.7	14.62	15.03	14.64	13.01	16.09	10.41

Source: Statistisches Bundesamt, Germany

Consumer Price Index (1976=100)

Period	All Items	% chg. from year earlier	Housing (Rent)	Food	Util.	Apparel	Transp.	Health care	Enter- tainment
1960	55.2	+1.4	38.9	59.3	42.3	58.3	54.2	45.0	52.6
1970	71.2	+3.3	71.4	73.1	56.7	71.0	66.6	67.5	73.6
1975	95.9	+6.0	95.1	95.1	93.8	96.7	95.5	95.4	96.3
1976	100.0	+4.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1977	103.7	+3.7	103.4	104.9	100.9	104.8	102.1	103.9	101.7
1978	106.5	+2.7	106.4	106.4	103.3	109.4	105.1	108.0	103.4
1979	110.9	+4.1	109.8	108.2	124.8	114.2	110.0	112.6	106.1
1980	117.0	+5.5	115.4	112.7	137.6	120.8	116.8	119.1	108.9
1981	123.9	+5.5	120.4	118.2	157.8	126.8	125.2	126.0	113.0

Source: Statistisches Bundesamt, Germany

Producer Price Index (1976 = 100)

Period	All commod.*	% chg. from yr. earlier	Farm products	All ind. commods.	Iron & steel	Chems.	Machs. nonel.	Processed foods
1960	64.8	-	60.5	62.3	73.4	70.5	50.2	69.8
1970	69.3	+5.6	67.1	71.0	72.0	74.9	66.4	75.4
1975	94.5	+3.4	89.4	96.4	99.0	98.8	95.1	96.1
1976	100.0	+5.8	100.0	100.0	100.0	100.0	100.0	100.0
1977	101.8	+1.8	98.9	102.7	96.0	99.1	105.0	105.7
1978	101.0	-0.3	95.5	103.9	96.1	97.4	108.7	104.8
1979	108.0	+6.9	96.9	108.9	99.0	105.5	112.8	105.0
1980	116.5	+7.9	99.3	117.1	102.9	113.8	118.8	107.7
1981	126.1	6.6	103.3	123.9	106.8	123.7	124.9	112.9

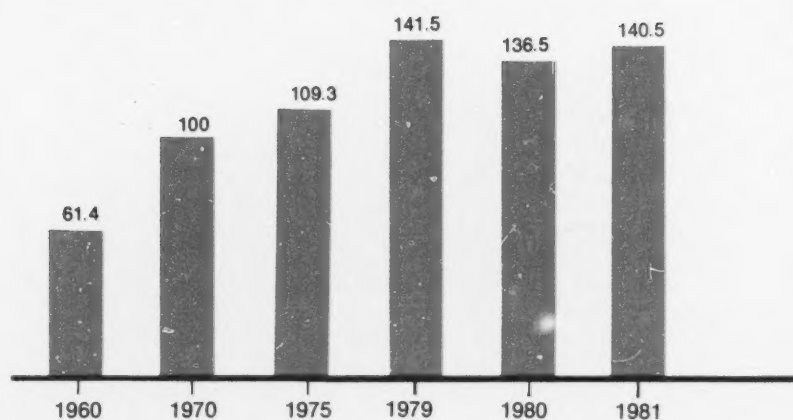
*Wholesale price index

Source: Statistisches Bundesamt, Germany

U.S.A.

INDUSTRIAL PRODUCTION

Index of Industrial Production (1970=100)



Source: U.S. Department of Commerce

Value of Shipments by Industry (in mil. \$)

Period	All Industries	Iron & steel	Nonferr. metals	Machs. nonel.	Machs. elec.	Motor-vehicles	Chemicals	Textiles
1960	364,920	16,080	9,720	33,240	23,400	25,920	27,720	14,520
1970	630,715	25,032	21,423	55,859	48,137	42,537	49,253	22,338
1971	666,959	26,656	21,312	58,830	50,041	54,786	52,170	24,472
1972	744,198	28,109	21,392	61,024	55,950	66,762	57,437	26,726
1973	856,778	35,260	26,539	73,380	63,497	77,278	67,034	30,531
1974	981,985	47,424	33,248	86,572	66,741	72,120	81,377	33,097
1975	992,687	40,353	24,156	89,485	64,388	73,220	85,967	32,941
1976	1,185,716	46,687	30,531	105,529	73,868	95,380	104,142	36,387
1977	1,335,072	51,519	40,877	119,008	85,759	117,758	113,891	40,821
1978	1,496,573	60,533	47,455	137,119	98,661	132,207	126,445	43,951
1979	1,692,001	68,663	54,650	157,695	110,713	129,364	149,481	46,992
1980	1,798,539	64,447	59,778	169,318	123,390	106,030	162,390	48,780
1981	1,997,775	n.a.	62,101	182,837	125,907	114,909	169,099	46,167

Source: U.S. Department of Commerce

Production of Selected Commodities

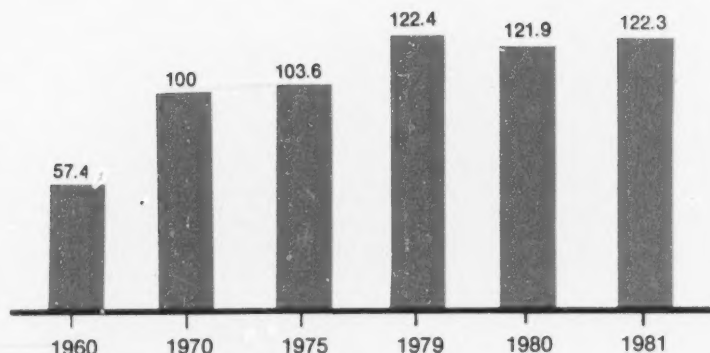
Period	Coal	Steel	Alum.	Cement	Sulfuric acid	Plastics	Elec. energy (in bil. kWh)	Cars (in 1000 units)
					(in mil short tons)			
1960	435	99.3	2.344	62.8	17.9	3.1	841.6	6,675
1970	613	131.5	4.757	76.1	29.5	9.4	1,639.8	6,547
1971	561	120.4	4.739	80.3	29.0	10.5	1,717.5	8,585
1972	602	133.2	5.067	84.6	31.4	12.9	1,853.4	8,824
1973	599	150.8	5.567	87.5	31.5	15.1	1,947.1	9,658
1974	610	145.7	6.093	82.9	34.2	15.2	1,967.6	7,331
1975	654	116.6	5.035	69.7	32.4	12.4	2,001.0	6,713
1976	685	127.9	5.597	74.5	33.5	14.8	2,036.5	8,498
1977	698	125.3	6.130	78.7	35.8	17.3	2,124.1	9,201
1978	671	137.0	6.211	84.8	41.1	19.4	2,203.9	9,165
1979	781	136.0	6.499	84.9	43.1	21.0	2,247.2	8,419
1980	835	111.1	6.501	77.0	43.9	19.3	2,285.4	6,400
1981	814	119.9	6.601	76.2	40.4	28.5	2,292.8	6,225

Source: U.S. Department of Commerce

GERMANY

INDUSTRIAL PRODUCTION

Index of Industrial Production (1970=100)



Source: Statistisches Bundesamt, Germany

Value of Shipments by Industry (in mil. DM)

Period	All Industries	Iron & steel	Nonferr. metals	Machs. nonel.	Machs. elec.	Motor-vehicles	Chemicals	Textiles
1960	266,373	20,107	4,564	24,475	19,353	16,577	22,360	16,482
1970	528,867	30,563	9,515	56,398	50,873	42,013	50,527	24,350
1971	563,033	27,506	8,736	61,092	54,578	46,161	53,576	26,054
1972	596,014	28,179	9,194	62,968	60,299	48,037	56,738	26,476
1973	743,232	38,195	13,738	75,175	72,799	69,185	75,042	28,789
1974	836,052	50,438	16,513	83,030	79,584	67,705	100,169	29,986
1975	819,312	42,842	13,766	92,562	78,318	77,533	90,451	28,159
1976	916,950	43,493	16,084	96,155	85,716	94,902	104,084	30,754
1977	963,132	40,056	16,238	101,514	92,101	105,738	108,539	31,268
1978	999,924	40,433	16,614	105,262	96,716	114,817	110,611	31,043
1979	1,105,356	45,670	21,284	111,389	104,054	124,634	126,007	32,315
1980	1,196,544	47,450	25,333	122,782	112,762	126,924	126,478	33,025
1981	1,223,391	48,343	23,122	125,627	117,739	136,954	138,096	32,771

Source: Statistisches Bundesamt, Germany

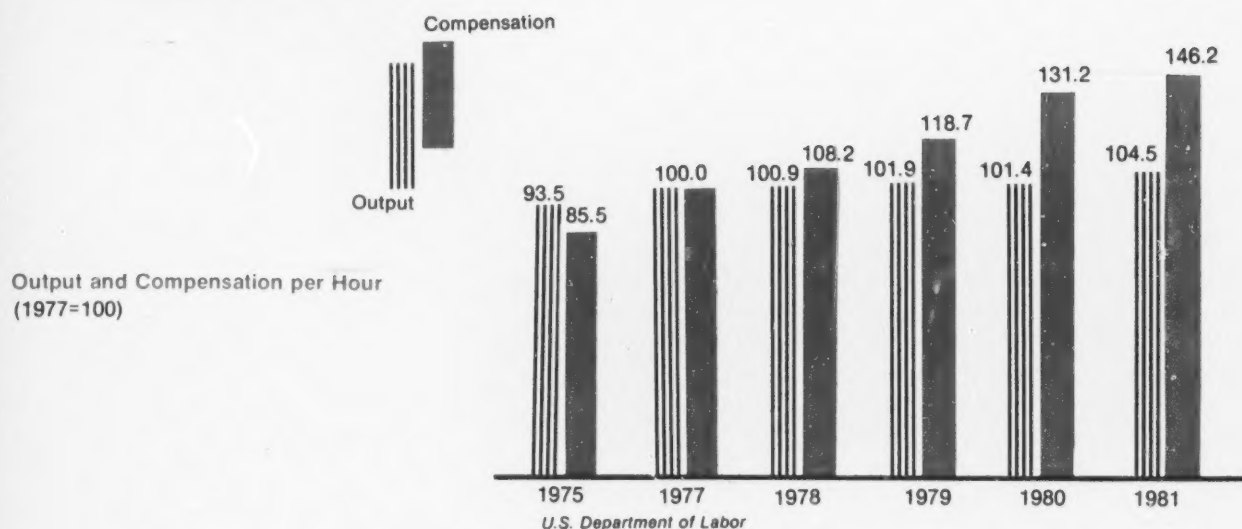
Production of Selected Commodities

Period	Coal	Steel	Alum.	Cement	Sulfuric acid	Plastics	Elec. energy (in bil. kWh)	Cars (in 1000 units)
	(in mil. metric tons)							
1960	142.3	33.4	0.169	24.9	2.6	1.0	116.4	1,817
1970	111.3	44.3	0.309	38.3	3.6	4.4	242.8	3,529
1971	110.8	39.7	0.428	41.0	3.6	4.8	259.6	3,692
1972	102.5	43.2	0.445	43.1	3.9	5.5	274.8	3,513
1973	97.3	48.9	0.533	41.0	4.1	6.5	299.0	3,643
1974	94.9	52.6	0.689	36.0	4.2	6.3	311.7	2,840
1975	92.4	39.7	0.678	33.5	3.4	5.1	301.8	2,906
1976	89.3	41.8	0.697	34.2	3.8	6.5	333.6	3,548
1977	84.8	38.5	0.742	32.2	3.8	6.2	335.3	3,796
1978	83.9	40.8	0.740	33.5	3.8	6.7	353.4	3,903
1979	86.3	45.5	0.742	35.5	4.1	7.2	372.8	3,942
1980	87.1	43.3	0.731	39.6	6.7	6.9	368.8	3,533
1981	88.4	41.1	0.729	31.5	4.0	6.6	366.9	3,295

Source: U.S. Department of Commerce

U.S.A.

PRODUCTIVITY AND LABOR COSTS IN MANUFACTURING



Productivity (1977 = 100)

Year	Output per Hour	Compensation per Hour	Unit Labor Costs
1975	93.5	85.5	91.4
1976	97.7	92.4	94.6
1977	100.0	100.0	100.0
1978	100.9	108.2	107.3
1979	101.9	118.7	116.5
1980	101.4	131.2	129.4
1981	104.5	146.2	140.0

Source: U.S. Department of Commerce

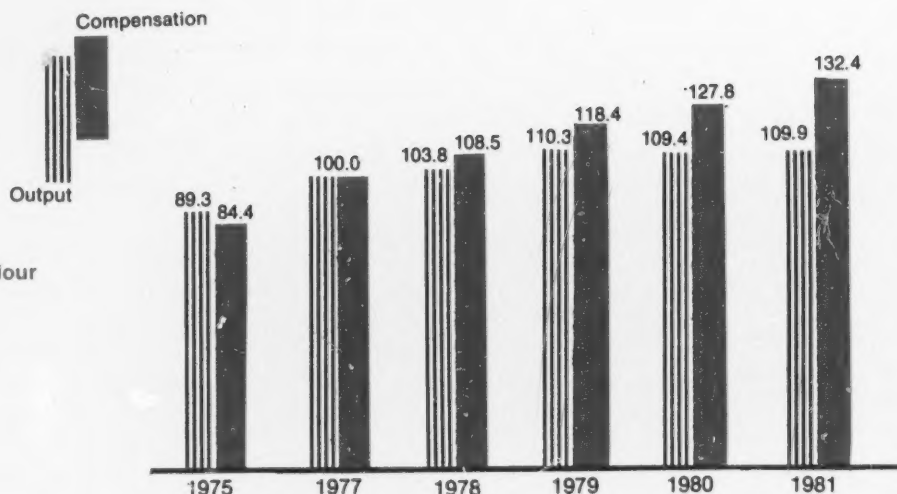
Hourly Compensation of Production Workers
(in \$)

Year	Average hourly earnings (in \$)	Additional compensation (in % of hourly earnings)	Total compensation per hour (in \$)
1975	4.83	31.4	6.35
1976	5.22	32.6	6.92
1977	5.68	33.7	7.59
1978	6.17	34.7	8.31
1979	6.69	35.5	9.06
1980	7.27	36.4	9.92
1981	7.98	36.9	10.06

Source: U.S. Department of Labor

GERMANY

PRODUCTIVITY AND LABOR COSTS IN MANUFACTURING



Source: U.S. Department of Labor

Productivity (1977 = 100)

Year	Output per Hour	Compensation per Hour	Unit Labor Costs
1975	89.3	84.8	95.0
1976	95.0	91.0	95.8
1977	100.0	100.0	100.0
1978	103.8	108.5	104.6
1979	110.3	118.4	107.4
1980	109.5	127.8	116.7
1981	109.9	132.4	122.8

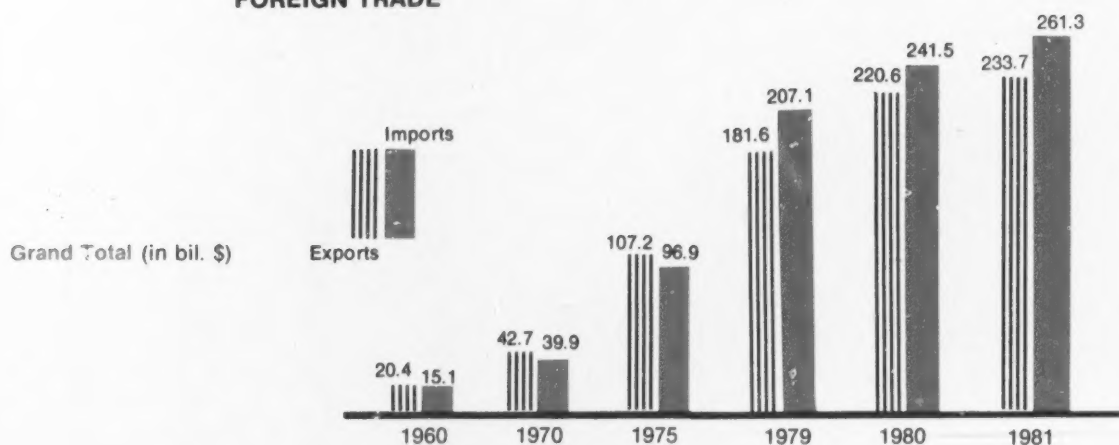
Source: U.S. Department of Commerce

Hourly Compensation of Production Workers
(in DM)

Year	Average hourly earnings (in DM)	Additional compensation (in % of hourly earnings)	Total compensation per hour (in DM)
1975	9.74	57.3	15.32
1976	10.39	59.2	16.54
1977	11.19	59.8	17.88
1978	11.76	60.8	18.91
1979	12.41	62.3	20.14
1980	13.36	63.4	21.67
1981	14.22	63.8	22.44

Source: U.S. Department of Labor

U.S.A. FOREIGN TRADE



Source: U.S. Department of Commerce

By Commodity Groups (in mil. \$)

Imports				Exports		
1979	1980	1981	Commodity group	1979	1980	1981
15,171	15,738	15,237	Food and live animals	22,245	27,744	30,290
2,566	2,598	3,138	Beverages and tobacco	2,337	2,663	2,914
10,650	10,165	11,193	Crude materials inedible	20,755	23,791	20,992
60,061	78,756	81,416	Mineral fuels and lubricants	5,616	7,982	10,279
740	539	479	Oils and fats	1,845	1,946	1,750
7,485	8,402	9,447	Chemicals	17,306	20,740	21,187
30,065	32,250	37,291	Manufactured goods by chief material	16,236	22,255	20,632
53,678	60,659	69,627	Machinery and transport equipment	70,491	84,628	95,717
21,006	23,666	26,178	Miscellaneous manufactured articles	12,643	16,347	16,745
4,905	7,170	7,295	Items not classified by kind	9,103	8,496	8,388
207,077	241,461	261,304	Total	181,646	220,623	233,739

Source: U.S. Department of Commerce

Major Partners (in %)

IMPORTS:

	1979	1980	1981
1. Canada	18.3	17.0	17.7
2. Japan	12.7	12.8	14.3
3. Mexico	4.3	5.2	4.4
4. Saudi Arabia	3.9	5.2	6.1
5. Germany	5.4	4.9	4.4

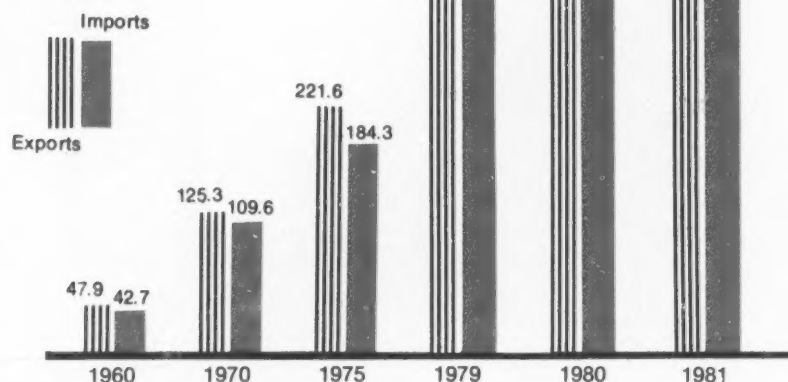
EXPORTS:

	1979	1980	1981
1. Canada	18.2	16.0	16.9
2. Japan	9.7	9.4	9.3
3. Mexico	5.4	6.9	7.6
4. United Kingdom	5.8	5.8	5.3
5. Germany	4.7	5.0	4.4

Source: U.S. Department of Commerce

GERMANY FOREIGN TRADE

Grand Total (in bil. DM)



Source: Statistisches Bundesamt, Germany

By Commodity Groups (in mil. DM)

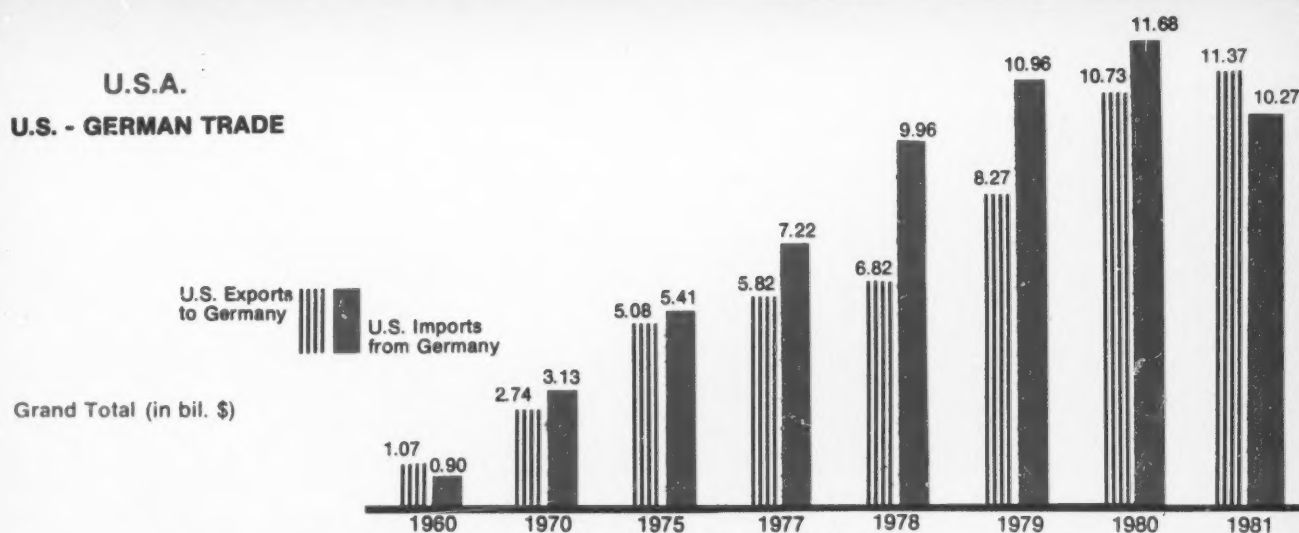
Imports				Exports		
1979	1980	1981	Commodity group	1979	1980	1981
30,650	33,257	36,585	Food and live animals	12,590	15,108	18,915
3,091	3,405	3,808	Beverages and tobacco	1,620	1,795	2,260
23,091	26,507	26,327	Crude materials, inedible	6,565	7,179	7,975
56,729	76,106	89,776	Mineral fuels and lubricants	10,613	13,225	16,080
1,531	1,445	1,726	Oils and fats	1,504	1,541	1,756
22,697	24,164	27,469	Chemicals	41,043	44,130	49,454
54,151	61,023	59,201	Manufactured goods by chief material	64,109	71,190	76,934
56,372	63,720	72,592	Machinery and transport equipment	141,087	155,254	177,513
34,079	39,446	41,349	Miscellaneous manufactured articles	29,325	32,645	36,114
9,769	12,186	10,351	Items not classified by kind	6,164	8,339	9,896
292,040	341,259	369,179	Total	314,469	350,400	396,898

Source: Statistisches Bundesamt, Germany

Major Partners (in %)	1979	1980	1981
IMPORTS:			
1. Netherlands	12.3	11.5	12.0
2. France	11.4	10.7	10.9
3. Italy	8.8	7.9	7.5
4. United States	6.9	7.5	7.7
5. Belgium-Luxembourg	8.0	7.2	6.7
EXPORTS:			
1. France	12.7	13.3	13.1
2. Netherlands	10.0	9.5	8.5
3. Italy	7.8	8.5	7.9
4. Belgium-Luxembourg	8.5	7.8	7.3
5. United Kingdom	6.7	6.5	6.6

Source: Statistisches Bundesamt, Germany

U.S.A.
U.S. - GERMAN TRADE

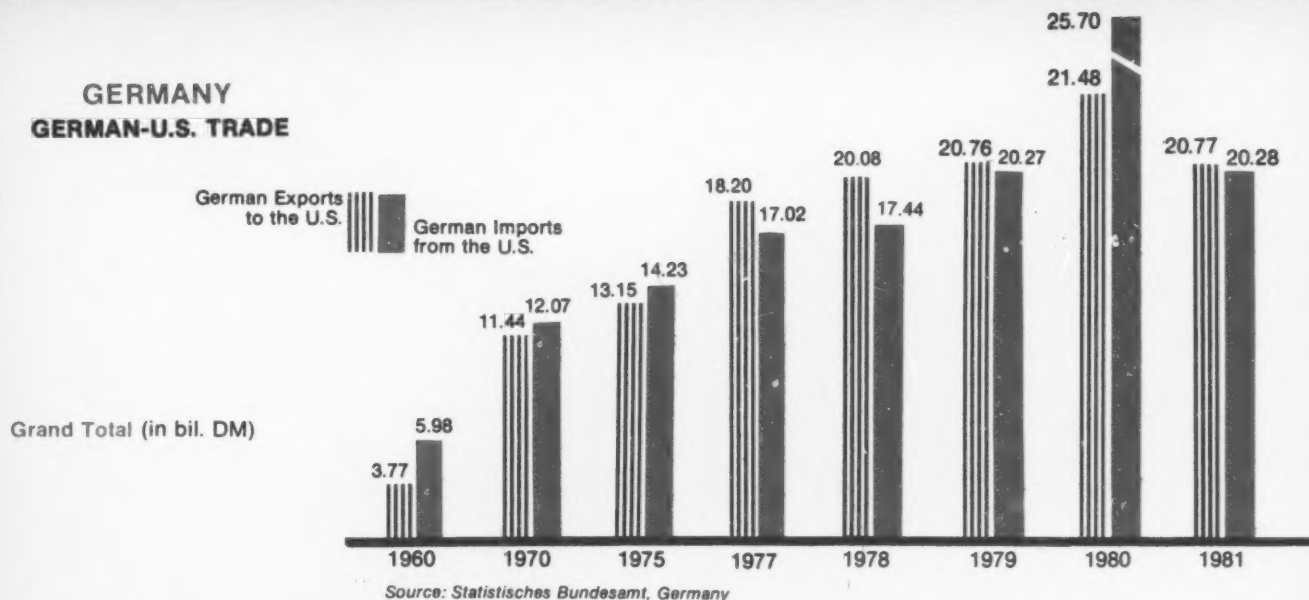


Major Items of U.S.—German Trade (in mil. \$)

U.S. Exports to Germany			U.S. Imports from Germany		
1979	1980	1981	1979	1980	1981
8,272	10,732	10,276.7	Total		
11,081*	14,161*	—	10,955	11,681	11,379
			11,337*	11,821*	—
746.1	951.1	775.2	Food and live animals		
23.8	31.2	23.5	121.9	168.8	143.4
3.9	6.4	7.0	Meat and prep.		
26.9	19.8	13.0	1.5	2.5	—
198.6	223.8	207.4	Dairy products and eggs		
171.0	291.3	225.8	6.0	16.0	23.3
300.5	361.6	279.2	Fish and prep.		
2.0	3.1	2.9	1.9	1.5	1.7
			Cereals and prep.		
			5.3	6.7	12.5
			Fruits and vegetables		
			19.1	34.3	32.7
			Animal feeding-stuffs		
			7.6	6.6	6.4
			Coffee, cocoa, spices and prep.		
			43.1	69.3	20.7
149.5	246.0	224.1	Beverages and tobacco		
—	—	—	135.5	145.5	159.0
0.1	2.0	1.8	Beer		
9.3	9.7	9.6	39.3	43.4	54.7
140.0	234.1	198.4	Wine		
			91.2	97.3	101.0
			Alcoholic beverages, distilled		
			1.7	2.1	2.4
			Tobacco, raw and manufactured		
			1.5	2.1	1.8
1,225.2	1,500.3	1302.4	Crude materials, inedible, exc. fuel		
90.5	102.9	10.2	90.9	130.1	152.6
346.0	398.5	566.8	Hides, skins and furskins undressed		
51.3	66.9	46.3	4.7	3.4	1.2
133.5	134.6	97.2	Soybeans		
140.8	202.9	223.5	—	—	—
65.4	101.6	41.8	Rubber, incl. synthetic and reclaimed		
74.0	84.7	53.1	2.2	3.3	0.1
196.5	330.3	199.9	Wood, lumber and cork		
60.6	112.3	99.5	0.6	0.5	0.7
17.9	18.4	20.4	Pulps and waste paper		
			—	—	—
			Raw textile fibers and their waste		
			10.3	11.7	23.5
			Crude fertilizers and minerals		
			9.6	8.6	9.3
			Metalliferous ores and metal scrap		
			52.9	88.5	92.6
			Nonferrous metal scrap		
			36.8	64.9	15.1
			Vegetable materials, crude		
			3.0	1.8	—
195.0	216.4	306.5	Mineral fuels and lubricants		
134.0	136.5	229.8	224.4	26.3	41.0
60.9	79.7	92.9	Coal, coke and briquets		
			201.0	4.4	—
			Petroleum and petroleum products		
			23.3	21.9	41.0
31.6	35.8	33.6	Oils and fats, animal and vegetable		
30.3	35.0	23.6	1.3	2.5	2.5
1.0	0.7	0.1	Animal oils and fats		
			0.2	0.2	0.4
			Vegetable oils and fats		
			—	1.1	0.9
765.8	850.8	857.7	Chemicals		
449.0	396.8	439.9	914.5	1,019.2	1,009.5
16.5	25.9	31.3	Organic and inorganic chemicals		
20.4	23.4	24.3	445.4	512.0	531.7
258.8	200.5	413.5	Essent. oils, perfume materials, soaps		
95.2	133.1	132.2	28.5	27.6	12.7
117.6	142.9	116.0	Dyeing, tanning and coloring materials		
56.4	79.1	91.1	92.4	97.2	123.8
			Radioactive materials		
			0.7	0.2	1.4
			Medicinal and pharmaceutical products		
			78.2	92.1	99.5
			Synthetic resins and plastic materials		
			165.5	149.4	112.5
			Other chemical products		
			100.5	126.7	127.9

GERMANY

GERMAN-U.S. TRADE



Major Items of U.S.—German Trade (in mil.\$) (continued)

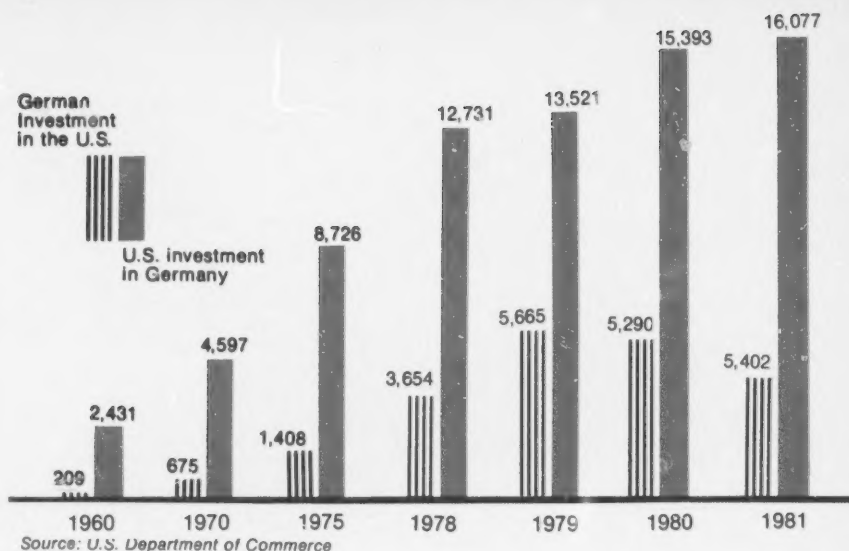
U.S. Exports to Germany				U.S. Imports from Germany		
1979	1980	1981		1979	1980	1981
680.0	990.9	648.5	Manufactured goods by chief material	1,606.8	1,493.0	2,206.3
17.2	24.6	10.2	Leather	18.3	18.4	18.7
7.7	9.8	9.9	Tires and tubes for tires	91.6	82.9	83.7
130.3	127.8	91.7	Textile yarn and fabrics	86.0	90.7	98.2
60.7	77.1	97.2	Wood and cork	7.0	6.8	3.4
105.3	142.9	113.7	Paper and paperboard	25.1	21.0	29.9
25.8	47.2	31.2	Iron and steel	690.6	557.1	1223.6
117.0	295.7	99.5	Nonferrous metals	205.4	202.4	247.8
141.7	180.7	149.1	Metal manufactures	260.4	284.1	269.3
30.4	33.4	36.1	Glass	41.8	43.9	45.4
10.3	13.5	16.0	Glassware	40.5	39.5	40.9
1.7	2.7	2.1	Pottery	70.5	68.4	53.3
3,275.7	3,916.4	4467.8	Machinery and transport equipment:	6,849.1	7,562.9	6,457.5
1,658.9	2,147.4	3096.2	Machines, exc. electrical	2,600.2	2,956.6	3,228.0
759.1	987.0	646.3	Electrical machines and apparatus	541.9	644.7	473.5
857.7	782.0	1371.7	Transport equipment	3,707.0	3,961.6	3,229.5
56.8	74.2	76.1	—Metalworking machinery	277.4	334.2	274.8
830.3	1,083.4	1093.3	—Office machines	213.5	195.1	185.2
51.0	50.7	40.4	—Agricultural machines	185.4	199.4	161.9
38.2	42.0	37.1	—Textile and leather machinery	242.5	249.2	238.9
213.8	291.5	370.5	—Other machs. for spec. industries	574.4	679.1	1059.5
288.5	374.6	372.4	—Other machinery	574.9	689.3	704.4
172.6	212.8	266.5	—Telecommunications apparatus	74.3	84.4	60.6
81.3	97.2	105.7	—El. medical and radiolog. apparatus	88.4	113.9	122.4
323.6	230.3	240.0	—Road motor vehicles and parts	3,662.9	3,889.0	3,229.5
511.3	533.0	1054.9	—Aircraft and spacecraft and parts	25.7	48.8	62.1
962.1	1,631.0	1104.9	Miscellaneous manufactured articles:	783.6	890.6	877.8
50.0	72.0	56.2	Clothing and accessories	30.4	22.9	23.9
3.2	4.5	4.4	Footwear	13.4	16.2	10.6
364.3	482.6	475.0	Prof., scientific and controlling instruments	237.5	277.4	263.4
176.8	210.6	129.2	Photo and motion picture supplies	61.7	52.7	60.7
4.3	3.4	3.1	Watches and clocks	53.3	52.0	49.6
54.6	68.1	79.0	Sound recorders, musical instruments	39.6	38.5	60.6
22.4	26.0	30.4	Printed matter	33.8	36.9	38.7
41.5	52.3	43.6	Rubber and plastic manufactures	97.5	116.1	121.2
98.2	116.1	88.4	Toys, sporting goods, baby carriages	34.1	38.6	37.0
80.2	511.9	30.2	Artworks, collectors pieces, antiques	32.0	61.3	40.0
9.7	14.6	12.1	Jewelry	23.8	22.5	22.6
158.9	256.5	211.3	Items not classified by kind	227.4	242.3	248.8

Source: U.S. Department of Commerce
 *Statistisches Bundesamt, Germany

U.S.A.

DIRECT INVESTMENT

U.S.A.-Germany (in mil. \$)



U.S. Direct Investment Abroad (in mil. \$)
(cumulative, book value at year end)

	1976	1977	1978	1979	1980	1981
Total	136,809	149,848	167,804	186,760	213,468	227,342
By country:						
1. Canada	33,932	35,200	37,081	40,243	44,640	46,957
2. United Kingdom	15,137	17,434	20,416	23,539	28,099	30,086
3. Germany	10,497	11,071	12,731	13,521	15,393	16,077
4. Switzerland	5,762	6,101	7,394	9,699	11,276	12,437
5. Bermuda	3,869	—	7,204	9,906	10,874	10,353
6. Other countries	67,612	80,042	82,978	89,852	103,186	111,432
By industry:						
1. Petroleum	28,408	31,420	33,790	38,744	46,920	52,107
2. Finance, insurance, real estate	16,715	20,327	24,041	31,523	34,405	25,745
3. Trade	13,610	14,744	17,340	22,677	25,752	28,162
4. Machinery	17,091	18,655	21,123	20,924	23,299	16,728
5. Chemicals	12,183	13,466	16,026	16,878	19,044	20,000
6. Other industries	48,802	51,236	55,484	56,014	64,048	84,600

Source: U.S. Department of Commerce

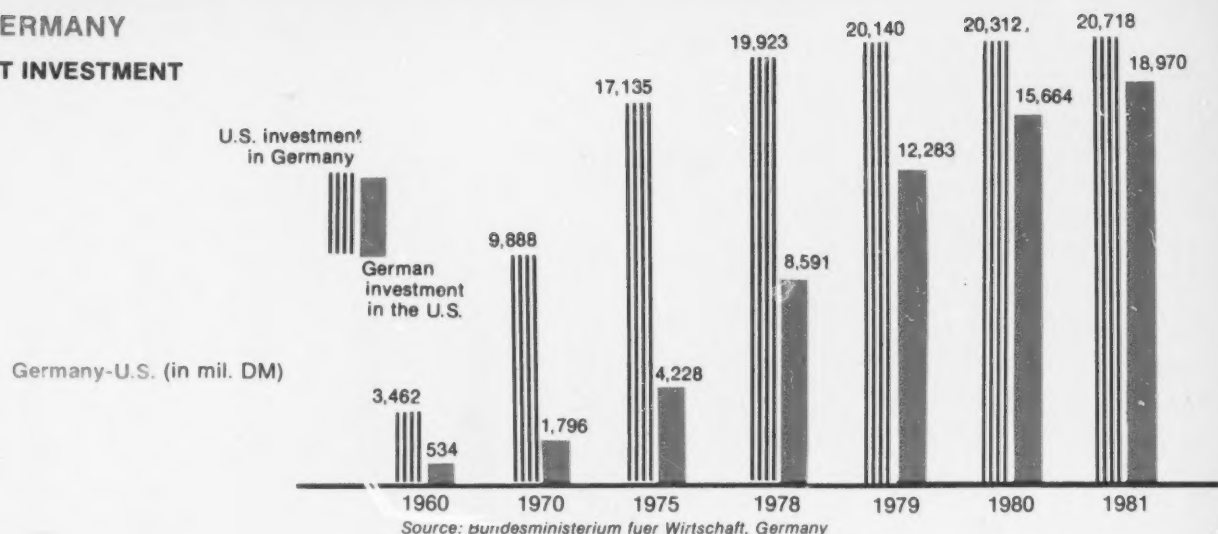
Foreign Direct Investment in the U.S.A. (in mil. \$)
(cumulative, book value at year end)

	1976	1977	1978	1979	1980	1981
Total	30,770	34,595	42,471	54,462	65,483	68,351
By country:						
1. Netherlands	6,255	7,830	10,078	12,672	16,159	16,909
2. United Kingdom	5,802	6,397	7,638	9,796	11,342	12,242
3. Canada	5,907	5,650	6,180	7,154	9,810	10,074
4. Germany	2,097	2,529	3,654	5,665	5,290	5,402
5. Japan	1,178	1,755	2,749	3,493	4,219	4,225
6. Other countries	9,531	10,434	12,172	15,682	18,663	19,499
By industry:						
1. Trade	6,123	7,237	9,161	11,562	13,772	14,296
2. Petroleum	5,921	6,573	7,762	9,906	12,253	12,363
3. Finance and insurance	3,943	4,544	5,231	7,575	9,889	10,365
4. Chemicals	4,347	5,092	6,094	7,212	7,859	8,017
5. Food products	1,693	1,826	2,260	2,611	4,092	4,187
6. Other industries	8,743	9,323	11,963	15,596	17,618	19,123

Source: U.S. Department of Commerce

GERMANY

DIRECT INVESTMENT



German Direct Investment Abroad (in mil. DM)
(cumulative, book value at year end)

	1976	1977	1978	1979	1980	1981
Total:	47,048	52,142	58,193	66,002	74,162	84,825
By country:						
1. United States	5,366	6,705	8,591	12,283	15,664	18,971
2. Belgium-Luxembourg	4,697	5,175	5,748	6,247	7,275	8,221
3. France	4,675	5,088	5,632	6,354	6,807	7,429
4. Switzerland	4,581	4,762	5,153	5,290	5,833	6,264
5. Brazil	3,451	4,039	4,463	4,996	5,359	6,093
6. Other countries	24,278	26,373	28,606	30,832	33,224	37,847
By industry:						
1. Chemicals	8,801	9,389	10,056	10,481	11,232	12,410
2. Finance and insurance	4,585	5,424	6,381	8,063	9,444	9,885
3. Electrical engineering	4,948	5,618	5,930	6,786	7,391	7,869
4. Iron and steel	3,859	4,061	4,779	5,643	5,867	6,210
5. Mechanical engineering	3,769	4,042	4,480	5,027	5,835	6,392
6. Other industries	21,186	23,608	26,567	30,002	34,393	42,059

Source: Bundesministerium fuer Wirtschaft, Germany

Foreign Direct Investment in Germany (in mil. DM.)
(cumulative, book value at year end)

	1976	1977	1978	1979	1980	1981
Total	45,518	49,253	53,326	55,242	57,616	61,803
By country:						
1. United States	17,893	19,049	19,923	20,140	20,312	20,718
2. Switzerland	7,261	7,962	8,338	8,595	8,683	9,353
3. Netherlands	5,848	6,316	6,308	6,666	7,240	7,966
4. United Kingdom	4,409	4,771	5,492	5,855	6,764	7,612
5. France	2,578	2,884	3,158	3,245	3,420	3,701
6. Other countries	7,529	8,271	10,107	10,741	11,197	12,453
By industry:						
1. Holding companies	4,935	5,214	6,569	6,870	6,885	7,597
2. Petroleum	5,954	6,328	6,636	6,377	6,676	6,912
3. Finance and insurance	3,503	4,573	4,840	5,235	6,046	6,758
4. Chemicals	3,807	3,964	4,314	5,391	5,609	6,085
5. Electrical engineering	4,073	4,405	4,651	4,659	5,152	5,622
6. Other industries	23,246	24,769	26,316	26,824	27,248	28,829

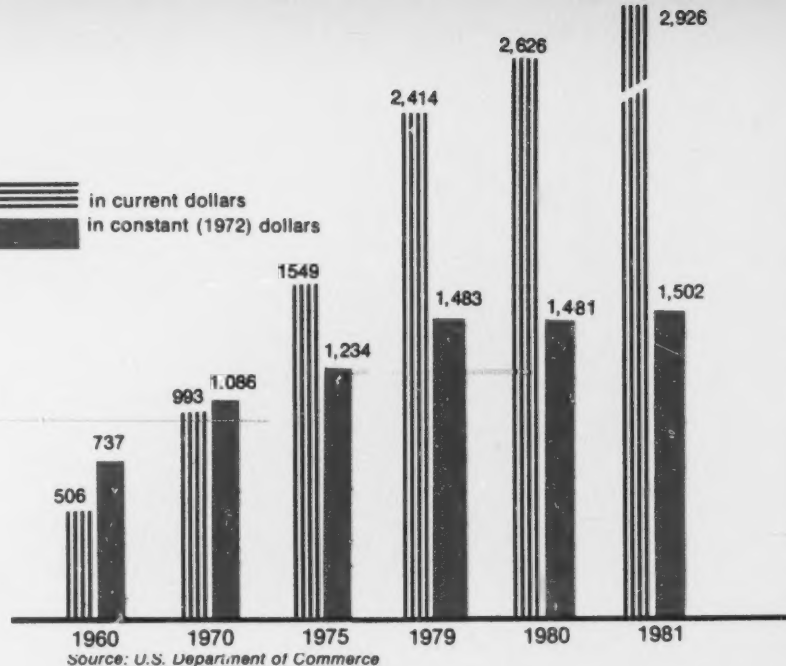
Source: Bundesministerium fuer Wirtschaft, Germany

U.S.A.

GROSS NATIONAL PRODUCT (in bil. \$)

 in current dollars
 in constant (1972) dollars

GNP Total



GNP by Type of Expenditure (at current prices)

Period	Gross national Product	% chg. from yr. earlier	Personal Consumption	Government Consumption	Gross Private Domestic Investment	Net Exports of Goods and Services
1960	506.0	+ 4.9	324.9	100.2	76.4	4.4
1970	992.7	5.2	621.7	220.1	144.2	6.7
1971	1,077.6	8.6	672.2	234.9	166.4	4.1
1972	1,185.9	10.1	737.1	253.1	195.0	0.7
1973	1,326.4	11.8	812.0	270.4	229.8	14.2
1974	1,434.2	8.1	888.1	304.1	228.7	13.4
1975	1,549.2	8.0	976.4	339.9	206.1	26.8
1976	1,718.0	10.9	1,084.3	362.1	257.9	13.8
1977	1,918.0	11.6	1,205.5	394.5	322.3	-4.2
1978	2,156.1	12.4	1,348.7	432.6	375.3	-0.6
1979	2,413.9	12.0	1,510.9	473.8	415.8	13.4
1980	2,626.1	9.8	1,672.8	534.7	395.3	23.3
1981	2,925.5	8.8	1,857.8	591.2	434.4	26.0

Source: U.S. Department of Commerce

GNP by Type of Expenditure (at constant 1972 prices)

Period	Gross National Product	% chg. from yr. earlier	Personal Consumption	Government Consumption	Gross Private Domestic Investment	Net Exports of Goods and Services
1960	736.8	2.3	453.0	172.9	105.4	5.5
1970	1,085.6	-0.2	672.1	251.1	158.6	3.9
1971	1,122.4	3.4	696.8	250.1	174.0	1.6
1972	1,185.9	5.7	737.1	253.1	195.0	0.7
1973	1,255.0	5.8	768.5	253.5	217.6	15.5
1974	1,248.0	-0.6	763.6	261.2	195.5	27.8
1975	1,233.9	-1.1	780.2	266.7	154.8	32.2
1976	1,300.4	5.4	823.7	266.8	184.5	25.4
1977	1,371.7	5.5	863.9	272.3	213.5	21.9
1978	1,436.9	4.8	904.8	277.8	229.7	24.6
1979	1,483.0	3.2	930.9	281.8	232.6	37.7
1980	1,480.7	-0.2	935.1	290.0	203.6	52.0
1981	1,502.6	1.5	947.6	287.1	225.8	42.0

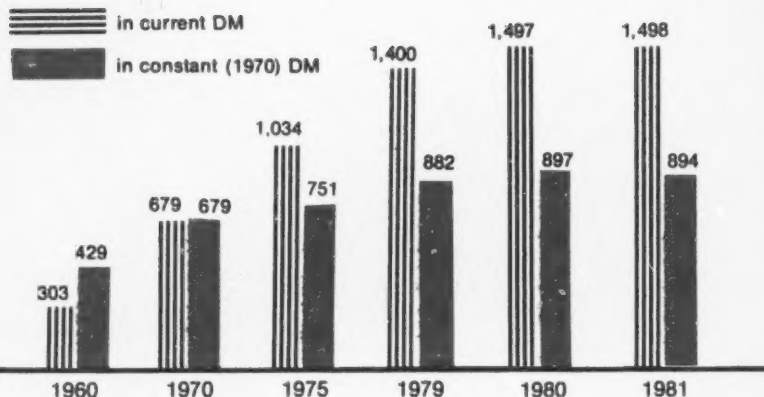
Source: U.S. Department of Commerce

GERMANY

GROSS NATIONAL PRODUCT

(in bil. DM)

GNP Total



Source: Statistisches Bundesamt, Germany

GNP by Type of Expenditure (at current prices)

Period	Gross National Product	% chg. from yr. earlier	Personal Consumption	Government Consumption	Gross Private Domestic Investment	Net Exports of Goods and Services
1960	303.0	11.7	171.8	40.7	82.5	7.9
1970	679.0	13.6	367.5	108.1	189.1	14.2
1971	756.0	11.3	407.8	129.1	203.4	15.5
1972	827.2	9.4	447.7	144.0	216.9	18.5
1973	920.1	11.2	491.7	166.7	232.6	29.1
1974	986.9	7.3	527.5	194.0	221.9	43.4
1975	1,033.9	4.4	576.5	215.3	214.5	29.8
1976	1,125.0	8.7	623.6	227.2	231.9	28.6
1977	1,200.6	6.7	669.6	239.4	249.0	29.5
1978	1,290.7	7.5	713.9	257.1	273.0	37.2
1979	1,400.4	8.5	766.4	278.6	314.4	12.4
1980	1,497.5	6.9	819.5	303.4	351.0	-2.4
1981	1,551.9	3.6	860.9	325.8	353.8	12.2

Source: Statistisches Bundesamt, Germany

GNP by Type of Expenditure (at constant 1970 prices)

Period	Gross National Product	% chg. from yr. earlier	Personal Consumption	Government Consumption	Gross Private Domestic Investment	Net Exports of Goods and Services
1960	429.5	9.0	226.4	69.5	118.7	14.9
1970	679.0	5.9	367.5	108.1	189.1	14.2
1971	701.7	3.3	386.9	114.9	188.8	11.2
1972	727.3	3.6	402.2	120.3	193.7	11.1
1973	763.0	4.9	412.5	126.8	197.8	25.9
1974	765.7	0.4	413.8	132.3	177.0	42.6
1975	751.5	-2.5	425.9	138.2	165.4	23.8
1976	792.0	5.3	441.0	141.0	173.2	26.6
1977	814.5	2.8	456.3	141.8	179.9	27.0
1978	843.5	3.6	474.4	147.8	189.1	25.7
1979	881.6	4.5	490.1	152.6	204.9	14.4
1980	897.5	1.8	497.5	156.3	212.6	14.4
1981	894.0	-3.8	493.2	160.1	205.3	35.9

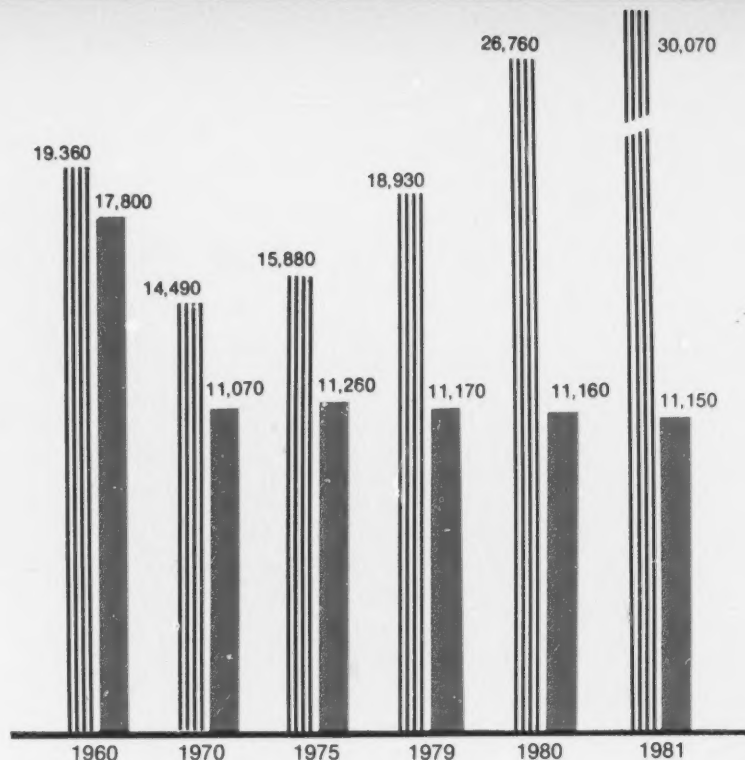
Source: Statistisches Bundesamt, Germany

U.S.A. INTERNATIONAL TRANSACTIONS



Total Gold

Monetary Reserves (in mil. \$)



Source: International Monetary Fund

Balance on Current Account (in bil. \$)

	1960	1970	1975	1978	1979	1980	1981
Balance on current account	2.8	2.4	18.3	-14.3	1.4	3.7	6.6
Merchandise trade	4.9	2.6	9.0	-33.8	-27.3	-25.3	-27.8
Services	1.2	3.0	13.9	24.8	34.3	36.1	41.2
Transfer payments	-0.6	-1.6	-4.6	-5.1	-5.6	-7.1	-6.7

Source: U.S. Department of Commerce

Currency Exchange Rates (Value of DM in \$)

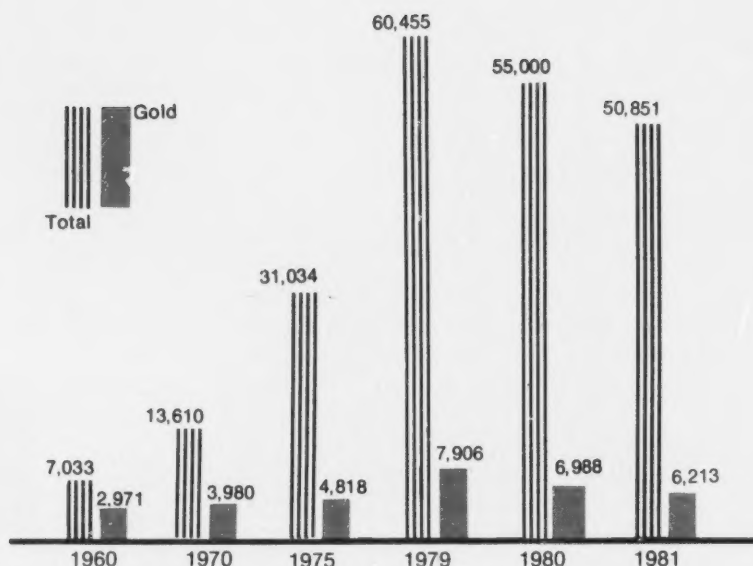
Period	Official parity	Exchange rate average
1960	0.2381	-
1970	0.2732	-
1971	0.2732 (floating May-Dec. 1971)	0.2874
1972	0.3103	0.3136
1973	0.3448 (floating from March 19, 1973)	0.3761
1974	-	0.3861
1975	-	0.4060
1976	-	0.3974
1977	-	0.4308
1978	-	0.4987
1979	-	0.5456
1980	-	0.5509
1981	-	0.4422
1982, Jan.	-	0.4363
Feb.	-	0.4226
March	-	0.4203
Apr.	-	0.4172
May	-	0.4333
June	-	0.4116

Source: Federal Reserve System
International Monetary Fund

GERMANY

INTERNATIONAL TRANSACTIONS

Monetary Reserves (in mil. \$)



Source: International Monetary Fund

Balance on Current Account (in bil. DM)

	1960	1970	1975	1978	1979	1980	1981
Balance on current account	4.8	3.2	9.9	18.4	- 9.6	-29.8	-16.6
Merchandise trade	5.2	15.7	37.3	43.2	22.6	9.0	27.7
Services	3.2	- 1.1	- 8.3	- 7.4	-11.5	-14.7	-17.9
Transfer payments	-3.5	- 9.8	-17.9	-17.4	-20.7	-24.0	-27.2

Source: Deutsche Bundesbank

Currency Exchange Rates (Value of \$1.00 in DM)

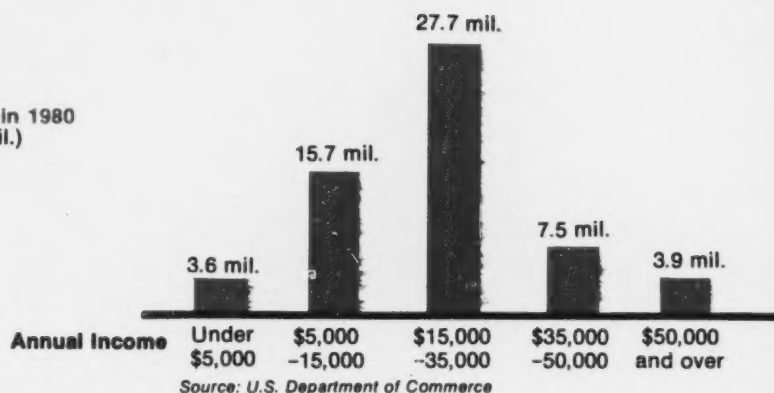
Period	Official parity	Exchange rate average
1960	4.2000	-
1970	3.6600	-
1971	3.6600 (floating May-Dec. 1971)	3.4795
1972	3.2225	3.1889
1973	2.9003 (floating from March 19, 1973)	2.6590
1974	-	2.5897
1975	-	2.4631
1976	-	2.5173
1977	-	2.3217
1978	-	2.0084
1979	-	1.8330
1980	-	1.8158
1981	-	2.2610
1982, Jan.	-	2.2920
Feb.	-	2.3665
March	-	2.3791
Apr.	-	2.3966
May	-	2.3077
June	-	2.4298

Source: Deutsche Bundesbank

U.S.A.

HOUSEHOLD AND FAMILY ACCOUNTS

Family Income Distribution in 1980
(Families, total: 58.4 mil.)



Urban Family Budgets 1980

	Lower budget (retired couple)		Intermediate budget (4 persons)		Higher budget (4 persons)	
	\$	%	\$	%	\$	%
Total:	9,434	100	23,134	100	34,409	100
Income taxes	-	-	3,781	16.3	7,924	23.0
Social Security Taxes	-	-	1,427	6.2	1,608	4.7
Food	2,772	29.4	5,571	24.1	7,024	20.4
Housing	3,106	32.9	5,106	22.1	7,747	22.5
Transportation	950	10.1	2,116	9.1	2,751	8.0
Clothing, personal care	665	7.0	1,763	7.6	2,556	7.4
Health care	950	10.1	1,303	5.6	1,359	3.9
Other costs	991	10.5	2,067	8.9	3,440	10.0

Source: U.S. Department of Labor

Households Owning Selected Durables (in % of total households)

	1970	1975	1979	1980
One or more cars	43.3*	49.7*	53.4*	54.2*
TV set, black & white	98.7	99.9	99.9	99.9
Color TV	42.5	74.4	89.8	90.0
Refrigerator	99.8	99.9	99.9	99.9
Freezer	31.2	43.5	44.7	43.9
Washing machine, automatic	62.1	68.4	77.3	77.0
Telephone	92.0	95.0	97.0	97.5

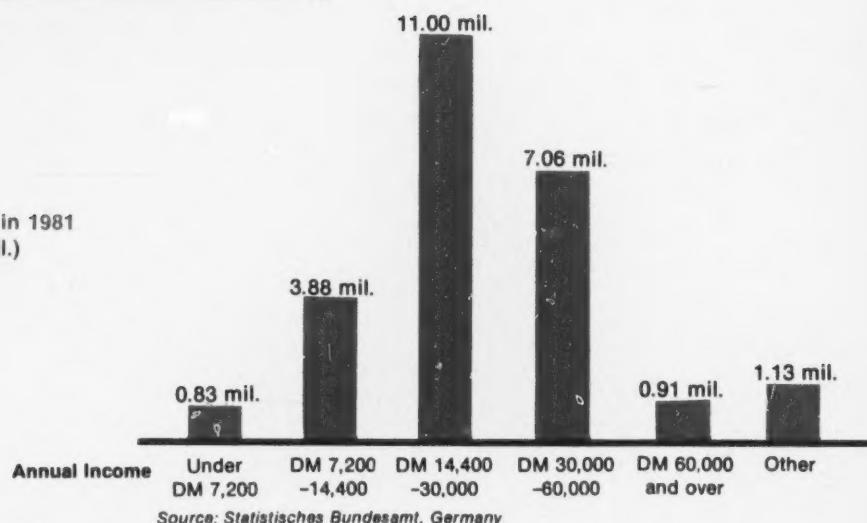
Source: U.S. Department of Commerce
Merchandising, Gralla Publications
Motor Vehicle Manufacturers Association

*Number of cars per 100 population

GERMANY

HOUSEHOLD AND FAMILY ACCOUNTS

Household Income Distribution in 1981
(Households, total: 25.1 mil.)



Urban Family Budgets 1980

	Lower budget (retired couple)		Intermediate budget (4 persons)		Higher budget (4 persons)	
	DM	%	DM	%	DM	%
Total:	16,862	100	46,963	100	75,038	100
Income taxes	-	-	5,024	10.6	11,303	15.0
Social Security Taxes	-	-	5,795	12.3	3,702	4.9
Food	4,876	28.9	8,386	17.9	10,306	13.7
Housing	3,332	19.7	5,016	10.7	7,367	9.8
Transportation	1,120	6.6	4,494	9.6	7,689	10.2
Clothing, personal care	845	5.0	2,806	6.0	4,268	5.7
Health care	667	3.9	1,003	2.1	3,134	4.2
Other costs	6,022	35.7	14,439	30.7	27,269	36.8

Source: Statistisches Bundesamt, Germany

Households Owning Selected Durables (in % of total households)

	1970	1975	1979	1980	1981
One or more cars	51.0	74.3	81.9	82.2	83.3
TV set, black & white	89.4	81.5	58.3	57.1	52.4
Color TV	3.5	29.3	69.2	73.8	78.7
Refrigerator	94.4	98.7	88.0	84.0	82.7
Freezer	18.5	52.2	66.7	63.4	65.2
Washing machine, automatic	37.5	57.6	75.6	78.8	79.8
Telephone	19.9	46.8	81.2	86.4	89.6

Source: Statistisches Bundesamt, Germany

Information Sources...

Government

**Embassy of the
Federal Republic of Germany**
4645 Reservoir Road N.W.; Washing-
ton, D.C., 20007.

German Information Center
410 Park Avenue, New York, N.Y.,
10022.

**Embassy of the
United States of America**
53 Bonn-Bad Godesberg; Mehlem-
er Aue.

Bundesminister fuer Wirtschaft
53 Bonn-Duisdorf; Villemomblerstr. 76
-Ministry of Economic Affairs.

Bundesminister der Finanzen
53 Bonn 1; Graurheindorferstr. 108 -
Ministry of Finance (incl. Department
for Customs & Duties).

**Presse-und Informationsamt
der Bundesregierung**
53 Bonn 1; Welckerstr. 11 - Public
Relations Department of the Federal
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Statistisches Bundesamt
62 Wiesbaden; Gustav Stresemann
Ring 11 - Federal Department of Docu-
mentation and Statistics.

Deutsches Patentamt
8 Muenchen 22; Zweibrueckenstr. 12 -
Commissioner of Patents.

Bundeskartellamt
1 Berlin 61; Mehringdamm 129 - Feder-
al Antitrust Agency.

Deutsche Bundesbank
6 Frankfurt/Main 50; Wilhelm-Epstein-
Strasse 14 - German Federal Reserve
Bank.

Public Authorities

Deutscher Normenausschuss
1 Berlin 30; Burggrafenstr. 4-7 - Deter-
mination Committee for Industrial
Standards.

Bundesanstalt fuer Arbeit
85 Nuernberg; Regensburgerstr. 104 -
Federal Employment Agency.

Binational Institutions

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**European Community
Information Service**
2100 M Street N.W.; Washington,
D.C., 20037.

Industrial and Trade Associations

Bundesverband der Deutschen Industrie
5 Koeln 51; Oberlaenderufer 84-88 -
Association of German Industries.

**Bundesvereinigung der deutschen
Arbeitgeberverbaende e.V.**
5 Koeln 51; Oberlaenderufer 72 - Umbrel-
la Association of employers' organiza-
tions; counterparts of the Umbrella
Organization of Labor Unions.

Deutscher Industrie- und Handelstag
53 Bonn 1; Adenauerallee 148 - Associa-
tion of German Chambers of Industry
and Commerce.

**DGB Deutscher Gewerkschaftsbund
Bundesvorstand**
4 Duesseldorf 30; Hans Boecklerstr. 39 -
Umbrella Organization of Labor
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**Bundesverband des deutschen
Gross-und Aussenhandels**
53 Bonn; Kaiser - Friedrich Str. 13 -
Umbrella Organization of exporters/
importers and wholesalers.

**Hauptgemeinschaft des
deutschen Einzelhandels e.V.**
5 Koeln 1; Sachsenring 89 - Retailer
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**Centralvereinigung deutscher
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5 Koeln 41; Geleniusstr. 1 - Umbrella
Association of brokers, agents and
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**Gesamtverband
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5 Koeln 1; Ebertplatz 1 - Association of
the Insurance Industry.

**Zentralausschuss der
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53 Bonn - Bad Godesberg; Villich-
gasse 17 - Association of Advertising
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**Ausstellungs- und Messeausschuss
der deutschen Wirtschaft e.V. [AUMA]**
5 Koeln 1; Lindenstrasse 8 - Organiza-
tion of Congresses and Trade Fairs.

Messe Frankfurt

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1983

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IMA	International Amusement and Vending Machines Trade Show	20.-23. 1. 1983
Musikmesse Frankfurt	Music Fair Frankfurt - International Trade Show Musical Instruments, Orchestral electronics, Musical Accessories, Sheet music	5.- 9. 2. 1983
Internationale Frankfurter Messe	Frankfurt International Fair International Trade Show for Consumer Goods	26. 2.-2. 3. 1983
ISH	International Trade Show Sanitation Heating Air Conditioning	22.-26. 3. 1983
Internationale Pelzmesse Frankfurt	International Fur Trade Show	13.-17. 4. 1983
49. interstoff	International Trade Show for Clothing Textiles	3.- 6. 5. 1983
IFFA	International Trade Show for the Meat Industry	29. 5.- 5. 6. 1983
Internationale Frankfurter Messe	Frankfurt International Fair International Trade Show for Consumer Goods	27.-31. 8. 1983
50. IAA	International Motor Show	15.-25. 9. 1983
Frankfurter Buchmesse	Frankfurt Book Fair	12.-17. 10. 1983
FBA '83	Frankfurt Office Equipment Exhibition	1.- 4. 11. 1983
50. interstoff	International Trade Show for Clothing Textiles	1.- 4. 11. 1983
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| 120 DG-Deutsche
Genossenschaftsbank | 195 Klockner-Moeller | 173 Union Air Transport |
| 229 DOM | 160 Kuehne & Nagel Inc. | 197 V.A.W. of America |
| 118 Dart Container | 184 Gebr. Kulenkampff | 203 Vereins-und Westbank |
| 181 Deloitte Haskins & Sells | 206 Krupp International | 117 Villeroy & Boch |
| 3 Deutsche Bank | BC Lufthansa German Airlines | 59 Volkswagen |
| 128 Deutsche Girozentrale | 26 Lurgi | 177 Ward Howell International |
| 10 Dresdner Bank | 193 Lykes Lines | 127 Westdeutsche Landesbank |
| 189 EM Industries | 78 M.A.N. | 24 Ernst Winter |
| | 30 Mahle | 19 Otto Wolff |
| | 160 Main Hurdman | 6 Carl Zeiss |

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6	Mississippi
7	New Mexico
8	Arizona
9	Louisiana
10	Georgia
11	South Dakota
12	Tennessee
13	Nevada
14	Idaho
15	Nebraska
16	Oklahoma
17	North Carolina
18	Virginia
19	Missouri
20	South Carolina
21	Arkansas
22	Wyoming
23	Utah
24	New Hampshire
25	Indiana
26	California
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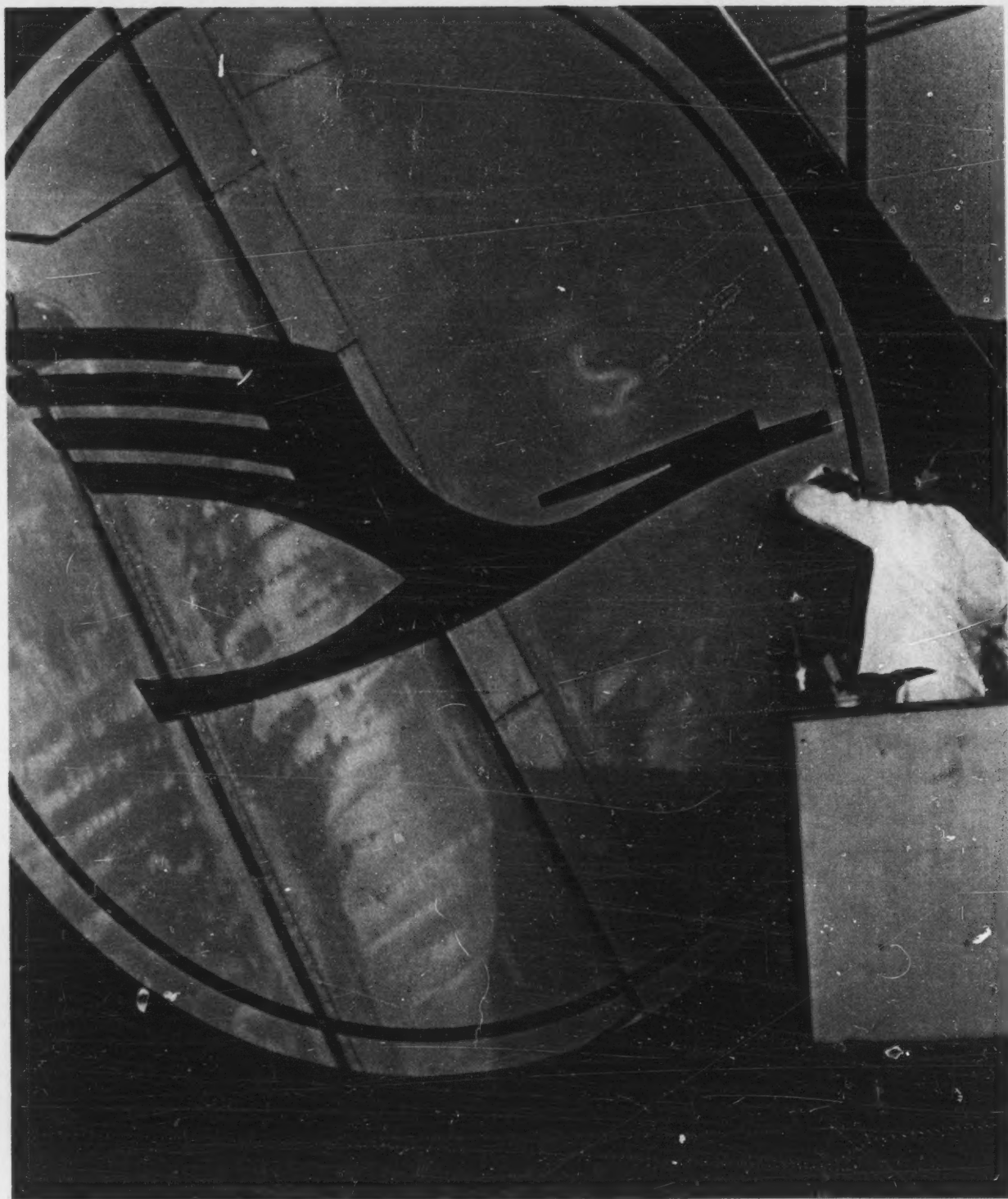
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